Routledge
Taylor & Francis Group

Information Technology for Development

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/titd20

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To cite this article: Andy Dearden & Dorothea Kleine (2020): Interdisciplinarity, self-governance and dialogue: the participatory process underpinning the minimum ethical standards for ICTD/ICT4D research, Information Technology for Development, DOI: 10.1080/02681102.2020.1840321

To link to this article: https://doi.org/10.1080/02681102.2020.1840321

Published online: 09 Nov 2020.

INFORMATION TECHNOLOGY FOR DEVELOPMENT
https://doi.org/10.1080/02681102.2020.1840321

Interdisciplinarity, self-governance and dialogue: the participatory process underpinning the minimum ethical standards for ICTD/ICT4D research

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ABSTRACT

Concerns about ethical issues in ICTD/ICT4D research have been growing in recent years, alongside calls to agree minimum ethical standards. This paper reflects on the three-year participatory process, co-facilitated by the authors, that has led to collective agreement on such a set of minimum ethical standards for ICTD/ICT4D research. The standards have been published (at http://www.ictdethics.org) under a Creative Commons licence, and are open for further comment. The current version has been endorsed by the ICTD conference series, and there is ongoing dialogue about their implementation by other conferences, journals, and funding bodies. While the standards themselves are a collective effort, in this paper the facilitators lay out their own specific thinking and approach to the co-production process that they designed and facilitated. It considers the successes, potential for further improvement, as well as critical features underpinning the standards' legitimacy. These reflections may help guide other research communities interested in such participatory self-regulation processes.

KEYWORDS

ICTD ethics; ICT4D ethics; ethical standards; participation; research ethics

1. Introduction

In this paper, we report on a collaborative process to develop a set of minimum ethical standards for the field of research into Information and Communication Technologies and Development (ICTD) / Information and Communication Technologies for Development (ICT4D). The standards are to be used in addition to the more generic disciplinary regulations and norms researchers are guided by. By publishing the standards under a Creative Commons licence we have sought to disseminate them widely for uptake, and we hope that agencies and organizations can review and adapt these guidelines for their specific situations.

The paper justifies the need for such standards, describes the process by which the standards have been developed up to this point, and critically reflects on this process as an example of a participatory project to develop ethical standards for an interdisciplinary field. The process involved over 130 different researchers and practitioners as participants at various conferences and workshops, spread across four continents over two years, with a parallel process of input through online review and discussion. The current version of the resulting standards (Version 2) is published

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Richard Heeks is the accepting Associate Editor for this paper.

under a Creative Commons (attribution, share-alike) license. It has been voted on and overwhelmingly supported by researchers at the ICTD 2019 conference in Ahmedabad, India, one of the leading conference series in the field, and was integrated into the review process for the ICTD2020 conference in Guayaquil, Ecuador (moved online due to the Covid-19 pandemic).[1]

Digital tools, digitization and datafication are now permeating many domains of development practice. Several international NGOs, foundations, bilateral and multilateral donors, as well as business actors, now have dedicated groups working on digital development and innovation. Alongside ICTD/ICT4D practice, an ongoing research field has developed with its own journals, conferences and other gatherings, which examine the contexts, technologies, systems, processes, success factors and failures, inclusions and exclusions in such programmes, projects and interventions. Research practices are also applied by non-academic actors, for instance in the monitoring and evaluation of ICTD/ICT4D projects and programmes.

ICTD/ICT4D practice and research is diverse, interdisciplinary and involves multiple stakeholders spread across many countries. Actors within this field hold positionalities characterized by cultural, historical, linguistic, social and economic differences, with related deep inequalities of resources, influence and power. This situation gives rise to complex ethical challenges for ICTD/ICT4D practitioners and researchers alike, including in their engagement with participants, funders, collaborating businesses, NGOs, governments and other agencies. However, to date, there has been no common agreed set of ethical guidelines that ICTD/ICT4D researchers and practitioners (and those responsible for upholding ethical standards in research) could use to inform their decisions.

In section 2, we consider the distinctive context of ICTD/ICT4D research and why there is a need (and a demand) for standards specific to the field to support ethical decision making. In section 3, we examine three examples of standard setting processes in fields that are closely related to ICTD/ICT4D research, and consider how each could claim legitimacy. In section 4, we detail the process that we followed to draft, review, revise and publish a set of Minimum Ethical Standards for ICTD/ICT4D Research (version 2.0). In the discussion (section 5), we use a conceptual lens based on structuration theory (Giddens, 1984) to consider: how the process that ultimately emerged has been shaped by the interplay of existing social structures and individual agency; by questions of inclusion and exclusion in the process. We reflect on the implications that these factors have for the legitimation of these standards, for their adoption and their future development, including further suggestions of involving research participants. In concluding, we call for the widespread adoption and implementation of these minimum standards in future ICTD/ICT4D research.

2. Background

Concerns about ethics in ICTD/ICT4D research and practice have been building for some years. It is beyond the scope of this paper to provide a full review of the critiques and debates, but the reader is referred to discussions in Anokwa et al. (2009), Blake (2010), Traxler (2012), Dearden (2013), Mthoko and Pade-Khene (2013), Krauss and Turpin (2013), Kapuire et al. (2015), Dearden and Tucker (2015), Zaman et al. (2016), Gautam et al. (2018). Below we highlight some of the particular concerns that have been raised.

Scholars have pointed out that ICTD/ICT4D's close relationship with technology companies, who frequently hold proprietary control over technologies on which interventions depend, can lead to development aims becoming intertwined with market expansion strategies (Kleine & Unwin, 2009). Murphy and Carmody (2015) go further, describing ICT4D as a 'neoliberalised meta-discourse' characterized by 'euphoric and overblown claims regarding the transformative power of ICTs' (p.4) and rife with technological determinism. Scholars advocating the use of postcolonial theory in ICT4D (e.g. Tsibolane & Brown, 2016) argue that information systems need to be critically analyzed as implicated in historical asymmetric power relations due to colonialism and used as emancipatory mechanisms for the marginalized against such structures of disempowerment. Oosterlaken (2015) presents a number of (fictional) ICTD/ICT4D scenarios that pose complex ethical dilemmas such

as: (i) potential risks when ICTD/ICT4D actors encourage people to share their views using digital media in a context where an authoritarian regime might threaten the project; (ii) how ICTD/ICT4D researchers should respond if research participants develop unrealistic expectations about the benefits that might follow from participating in a project.

At the level of concrete ethical research practices, ICTD/ICT4D researchers encounter several practical challenges: Firstly, the fast pace with which technologies and related information practices often evolve over the course of a project make gathering informed consent in ICTD/ICT4D projects particularly difficult (Sterling & Rangaswamy, 2010). Secondly, Lorini (2018) discusses ethical issues surrounding the use of visual media in participatory ICTD/ICT4D research, highlighting the tensions between protecting participants from harm versus giving appropriate acknowledgement for participants' creative contributions. Thirdly, ICTD/ICT4D researchers working in unfamiliar social contexts are often unable to recognize some risks and unintended consequences associated with their actions. The distribution of risks and benefits might be unfair with researchers deriving significant career gains, with insufficient gains being delivered for participants (Dearden, 2013).

Zaman et al. (2016) discuss problems where researchers working with indigenous communities fail to understand and show appropriate respect for local values and norms of behavior, leading to conflicts, deteriorating relationships and potential harms. In one such case, described in Kumar et al. (2015) a field trial of a new data capture tool (using a mobile phone camera to capture diagnostic test results and transmit these to a server) led to additional work for nurses who were then actually required to use both digital and existing paper methods. This resulted in clinics being able to treat fewer patients.

Gautam et al. (2018) discuss the deep ethical tensions arising in setting goals for their participatory ICTD/ICT4D research with NGOs and survivors of sex-trafficking in Nepal. Their work highlights how the interests of funders, researchers, the NGOs and 'sister-survivors' may conflict when considering potential ICTD/ICT4D interventions. Other scholars, such as Dearden and Tucker (2015), discuss projects where researchers make one or more short-term visits to field sites, which they characterize as 'Bungee Research,' and suggest some mitigation strategies. Scholars such as Lorini (2018) and Hansen (2019) discuss the complex ethical issues surrounding the choices of organizations and individuals to engage with in research, and of developing mutually respectful relationships. Kapuire et al. (2015) express 'deep unease with the often unequal and alienating standpoints of mainstream research paradigms' (Kapuire et al., 2015, p. 9). They propose instead an approach to ICTD/ICT4D research which highlights reciprocity, demanding transparency about the agendas and gains for both the researchers and the community.

Thus, there have been ongoing discussions for at least a decade about specific ethical dilemmas arising from ICTD/ICT4D research. At the 2015 ICTD conference, the continuing unease turned into an express call for an agreed set of minimum ethical standards. There was discussion of how these might be drawn up (e.g. top-down by a steering committee or through a participatory process). As proponents of a participatory and as far as possible inclusive process, the authors volunteered to design and facilitate such a process and the project reported here was then initiated.

As an interdisciplinary field, ICTD/ICT4D cannot simply rely upon the disciplinary norms and ethical standards of any one of the many related disciplines, from computer science to anthropology. This is because different disciplines tend to study different types of phenomena, at different scales (e.g. individuals, groups, communities, societies etc.), using different techniques (qualitative, quantitative, participatory, designerly etc.), based on different underlying philosophies (e.g. positivist, interpretivist, pragmatist, etc.), they interact with people in research settings in different ways (e.g. intervening in social settings to different degrees), and their ethical guidance frameworks tend to reflect those particular characteristics. Some disciplines do benefit from having developed some additional guidelines relating specifically to work in the global South / 'developing countries,' but that work has not specifically addressed the particular ethical issues around the use and application of ICT.

Four specific factors make ICTD/ICT4D challenging for ethical governance.

- Firstly, difficulties arise when schemes from one discipline, addressing particular methodologies, are used to evaluate plans developed in other disciplines. Since medical research often has the strictest and most developed ethical review protocols, many Institutional Review Boards (IRBs) or similar committees, in both the global North and South, tend to orientate towards these standards in the absence of codified standards from other fields (Israel, 2018). It is therefore also in the interest of ICTD/ICT4D researchers to develop relevant standards that can be shared with such committees to inform their discussions about the acceptability (or otherwise) of proposed research activities.
- Secondly, governance models that assume that a detailed protocol is defined in advance of commencing research are poorly suited to the types of contextual, iterative, action research, design research or participatory methods (Carter & Williams, 2019; Tracy & Carmichael, 2010) that are common in development settings and some ICT4D work.
- Thirdly, research conducted in income-poor communities in the global South often involves major imbalances of power not only between researchers and research participants, but also asymmetric economic, political and social relationships between countries, research institutions and local research communities. Such imbalances can result in problematic research practices such as: external researchers dominating research activities and the definition of research agendas; data extraction or appropriating and constructing knowledge from lower or middle income countries which is then held primarily outside those countries; contributing to 'brain drain' by encouraging talented scholars to take up positions abroad (London & McDonald, 2014).
- A fourth challenge emerges from the rapid evolution of digital technologies for data capture and processing (including artificial intelligence and big data which potentially undermine traditional anonymization strategies), that are demanding new ethical debates that will obviously impact on the ethics of ICTD/ICT4D (see, for example, Ryan et al., 2019).

A further critique of most existing standards is failure to recognize the moral imperatives arising from the global ecological emergencies which challenge researchers to examine the environmental effects of their research plans. Specific to ICTD/ICT4D are concerns with extensive air travel for fieldwork and conferences, and e-waste generated in ICT4D interventions (whether successful or not).

Our approach of developing specific standards appropriate to the field of ICTD/ICT4D is intended to complement, rather than replace, existing standards that may be relevant to particular disciplines or settings, by providing insight about some of the specific challenges in our field. Governance of research should be a collaborative and discursive practice in which stakeholders (e.g. researchers, members of ethics boards, external advisors, representatives of research participants) seek to evaluate all the information available to them from external sources, from the research context, and from their own (and others') prior experience, to guide decision making. Our goal, therefore, was to develop a set of standards that could assist in this decision making (whether reflective decision making and planning taking place away from research sites, or pragmatic decision making by researchers and other actors engaged in day to day practice at the research site), by drawing attention to some of the specific contextual factors that distinguish ICTD/ICT4D research.

From the start, we recognized that persuading individual researchers, research teams, governance bodies and other key actors to adopt a given set of standards would depend, in part, upon those agents' perceptions of the legitimacy of the standards. We recognized that this perceived legitimacy would depend (at least in part) on the processes by which the standards were developed, and the range of perspectives that were considered within those processes. While acknowledging the wide range of different normative ethical frameworks (deontological, consequentialist, virtue ethics, ethics of care etc.), and that philosophical traditions on ethics vary across cultural contexts, we chose, rather than focusing on seeking legitimation by emphasizing a-priori philosophical reasoning, to focus our efforts on participation, interdisciplinary dialogue and inclusion. In other words, we aimed for a pragmatic effort to develop practical minimum ethical standards which ICTD/ICT4D researchers from different disciplinary and cultural traditions could agree upon and might find useful.

In the same spirit of pragmatism and sharing across disciplines we sought to learn from previous similar undertakings. To contextualize the work, before discussing the process by which the minimum ethical standards were developed, we reflect on three comparable efforts to develop guidelines and codes of practice within fields related to ICTD/ICT4D research, and consider how those endeavors could stake their claims to legitimacy.

3. Examples of projects aimed at establishing standards

3.1. Process 1: the digital principles

An important reference point for ICT4D practice are the Principles for Digital Development (www.digitalprinciples.org) which were designed to guide practical ICT4D interventions, but do not cover research. In the early 2000s, increasing application of digital technologies in development led to concerns with sharing good practice, and avoiding costly stand-alone projects that were ultimately not sustainable (see, for example Dodson et al., 2013). In 2009, the United Nations Children's Fund (UNICEF) developed a set of nine principles to guide activities in innovation and technology in development, namely: 'Design with the User,' 'Understand the Existing Ecosystem,' 'Design for Scale,' 'Build for Sustainability,' 'Be Data Driven,' 'Use Open Standards, Open Data, Open Source, and Open Innovation,' 'Reuse and Improve,' 'Do no harm' and 'Be Collaborative.' Independently, in 2010, donors in the mHealth domain met at the Greentree Estate in New York State to discuss best practice, leading to the Greentree Principles. Recognizing shared concerns, a working group of implementers, practitioners and donors convened over a series of nine meetings in 2014 to develop what have become the current nine Principles for Digital Development. These follow the headings originally identified by UNICEF, but extend and discuss each area in significantly greater detail. The principles attracted endorsement from numerous supranational, national and non-governmental agencies, including the United Nations Development Program (UNDP), the UN High Commissioner for Refugees (UNHCR), the World Food Program (WFP), World Health Organisation (WHO); and from major donors such as the United States Agency for International Development (USAID), Gates Foundation, the Swedish International Development Agency (SIDA), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the UK Department for International Development (DFID). The principles have been critiqued by some for failing to consider wider issues of how the policy and funding context, and the actions of donors themselves, can undermine claims to 'design with users' or to 'be collaborative' (Bon & Akkermans, 2019). Roberts (2020) argues that the Principles need to recognize the complex differential impacts that may arise due to gender, race, and disability. In his critique he states that the Principles should have been curated in a more iterative and adaptive way.

Legitimacy here relied on the credibility of the authors of the digital principles as practitioners who were aware of the challenges of practical implementation. Further, legitimacy was transferred through uptake and endorsements, in particular by some of the most significant funding bodies, international and bilateral agencies.

3.2. Process 2: ethics in community informatics

A different approach was followed in the field of Community Informatics. The Community Informatics Research Network (CIRN) recognized early that codes of conduct were a part of the evolution of a field of study (Stoecker, 2005). In response, Averweg and O'Donnell (2007) prepared a draft code of conduct and published this at the 2007 CIRN conference, inviting comment and feedback. These standards were heavily influenced by the Canadian Tri-Council ethical guidelines with particular reference to research with First Nations, Inuit and Metis peoples (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, [Canadian Tri-Council], 1998, chapter 6).

The need for practitioner guidelines, to complement research ethics standards, was picked up later through a workshop at the 2014 CIRN conference exploring 'Ethics, Diversity and Inclusion' (Wolske & Rhinesmith, 2016). The workshop led to a framework of critical questions that Community Informatics practitioners should ask of themselves and their projects. A draft document was presented via posters at the 2015 CIRN conference, with sticky notes used to collect feedback and finally published at the 2016 conference (Wolske & Rhinesmith, 2016).

Legitimacy for these codes flowed from the credibility of the authors, the relation to established source materials, and the review and feedback process. While the code of conduct did not benefit from endorsements of key organizations, it encouraged dialogue about the issues. These codes cover several ethical issues in Community Informatics, and, in part thanks to their links with indigenous groups, are strong in their critique of neo-colonial forms of research configuration. However, the codes are not very comprehensive and do not include: links with companies, organizations or governments; positionality of researchers; automated data harvesting; or the environmental cost of doing research. Also, because the codes were so strongly oriented in favor of participatory methods, this may limit their applicability in relation to other forms of research.

3.3. Process 3: the developing areas research group

To use an example from the social sciences, the Developing Areas Research Group (DARG) of the Royal Geographical Society (RGS) (with the Institute for British Geographers, IBG) developed their ethical guidelines by building on previous work in the group, including a book on postgraduate fieldwork (Robson & Willis 1994, revised 1997). In the early-2000s the group sought a shorter set of guidelines to assist in teaching and research preparation. As the relevant learned society, the RGS-IBG has a code of practice for research grants which very briefly covers ethics and advises that researchers follow their institutions' ethical approval processes. DARG formulated guidelines and principles of ethical fieldwork with communities in the global South. These guidelines were not just about 'harm limitation' but also about 'duty to engage' with communities (Williams[2]), and were influenced by critical debate on the nature and value of participatory approaches (Cook & Kothari, 2001; Hickey & Mohan, 2006). The guidelines were drafted by the Chair, discussed in committee, circulated to all DARG members for comment, and then edited as a result. The reviewed and revised guidelines were accepted at the DARG AGM in 2003, published online, with the group expressing the hope 'that members will contribute to (re)formulation in the future … ' (DARG website, n.d.). Subsequently, the guidelines have been used in orientating students preparing for fieldwork, and are cited in papers and edited books (e.g. Lunn, 2014). RGS-IBG grant applicants are now sign-posted to the guidelines where appropriate, and thus the wider learned society is implicitly endorsing them (RGS-IBG website, n.d.). The DARG guidelines offer very good coverage for much social science-based research, including some action research issues, but do not cover technology design or the challenge of automated datafication.

Legitimacy for the DARG guidelines was based, firstly, on the credibility of the authors and reviewers, and endorsement by an entity (DARG) with a track record in this space. Secondly, the process included a pre-publication peer review round, albeit only by group members. The guidelines were further legitimized through uptake: by inclusion in reading lists, classes and supervisions, and by subsequent work citing them. Further legitimacy was conferred through the learned society pointing grant applicants towards these guidelines.

These three examples variously derive legitimacy through the standing of their authors, openness to peer review, uptake by others, and through endorsement by established organizations.

4. A process for ICTD ethics

The process we developed to co-produce ethical standards for the ICTD/ICT4D field shares many similarities with the above cases, but does have some distinct characteristics. In volunteering to

become facilitators for this process, the authors responded to a need expressed by the community for such minimum ethical standards. ICTD/ICT4D is a very diverse interdisciplinary field, so a wide range of existing sources of ethical guidance had to be considered. We aimed to draw upon relevant existing standards and then develop them to address the specific challenges of our field. As a further principle, our intention was to make participation in the process as open as possible and in particular to include, as far as possible, researchers from the global South.

Once the standards were developed, endorsements would be sought from key actors. As a multi-disciplinary field with no immediate learned society to appeal to, the focus would then be on key conferences and their review processes, as well as key funding bodies.

The co-facilitators would need to have credibility based on their track record in the field. A co-production process would be required, and the peer review process needed to be open to any self-identifying ICTD/ICT4D researcher globally (part of building legitimacy). It is hoped that these co-produced standards will gain further legitimacy through uptake, and formal endorsements by key communities (e.g. conferences) and actors (e.g. funders, journals).

Due to the momentum developed through the call for standards at the 2015 conference, it was necessary to start the process immediately, to run workshops within existing conferences and use existing ICTD/ICT4D regional groups, rather than setting up stand-alone ethics-themed meetings. In doing so, we relied on volunteered contributions (effort, time, ideas, including our own) to a shared commons. This meant that there was openness for new researchers to join the process and it maintained independence from any one funder. Attaching workshops to existing group meetings and conferences was done as a way of respecting the time contributions that colleagues were making to the co-production process in a context in which ethical review work is frequently an undervalued activity in university career pathways.

The authors facilitated a multi-stage participatory process which aimed to be welcoming for the ICTD/ICT4D community in its regional and stakeholder diversity. Our ethos was to be inclusive and lean, working with the grain of participants' normal work and existing travel schedules. By keeping the time and transaction costs of participation as low as possible, we sought to extend participation from those with a central interest in research ethics to the wider ICTD/ICT4D community. Figure 1. gives an overview of the process, which is explained in detail below.

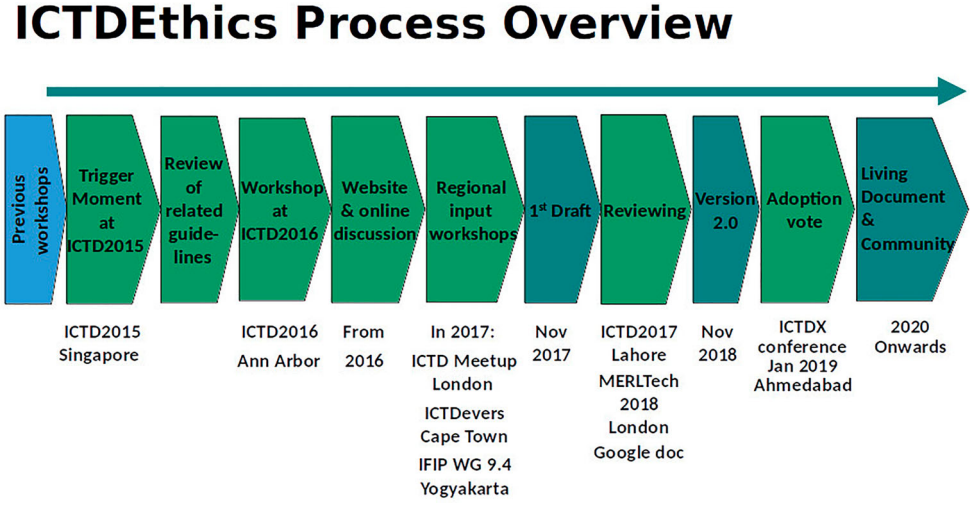


Figure 1. Overview of the ICTD Ethics process.

4.1. Step 1: Learning from existing guidelines

To avoid 're-inventing the wheel,' we began by exploring existing ethical guidelines from other disciplines that already inform the work of ICTD/ICT4D researchers. This included the three standards documents discussed above (The Digital Principles, the Community Informatics standards and the DARG guidelines), together with standards discussing ethics in healthcare research in developing countries, Internet research, anthropology, community based participatory research and research conducted with First Nations in Canada. Box 1 lists the eight sets of guidelines that were chosen for this workshop.

Box 1: Guidelines used in the ICTD 2016 workshop.

American Anthropological Association, 2012. Principles of Professional Responsibility. Retrieved Sept 23, 2020 from: http://ethics.americananthro.org/category/statement/

Association of Internet Researchers, 2012. Ethical Decision-Making and Internet Research: Recommendations from the AOIR Ethics Working Committee. Retrieved Sept 23, 2020 from: https://aoir.org/reports/ethics2.pdf

Awerweg and O'Donnel, 2005. Code of ethics for community informatics researchers. Retrieved Sept 23, 2020 from: http://ci-journal.net/index.php/ciej/article/view/441/307

Centre for Social Justice and Community Action, Durham University National Co-ordinating Centre for Public Engagement, 2012. Community-based participatory research. A guide to ethical principles and practice. Retrieved Sept 23, 2020 from: https://www.dur.ac.uk/resources/beacon/CBPREthicsGuidewebNovember2012.pdf

Royal Geographical Society (with IBG) Developing Areas Research Group, 2003. DARG Ethical Guidelines. Retrieved Sept 23, 2020 from: https://developmentgeographiesrg.org/darg-ethical-guidelines

Nuffield Council on Bioethics, 2014. The ethics of research related to healthcare in developing countries. Retrieved Sept 23, 2020 from: http://nuffieldbioethics.org/wp-content/uploads/2014/07/Ethics-of-research-related-to-healthcare-in-developing-countries-I.pdf

Secretariat on Responsible Conduct of Research, 2014. Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans. Retrieved Sept 23, 2020 from: https://web.archive.org/web/20160508060922/http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/chapter9-chapitre9/

United Nations Children's Fund (UNICEF). Principles for Innovation and Technology in Development. Retrieved September 11, 2019 from: https://web.archive.org/web/20140809204158/https://www.unicef.org/innovation/innovation_73239.html

We held an open workshop (at the ICTD 2016 conference in Ann Arbor, MI, US), for which we had prepared, as input documents, the eight sets of guidelines. Workshop participants were asked to review them and to identify content that might be useful for ICTD/ICT4D.

Twenty nine participants from academia, funders, businesses and NGOs attended the 90-minute workshop. Of these, approximately 17 were women, 12 were people of color, and participants came from many different countries (despite the location of the conference, only a minority were based in the US/were US citizens).[3] They worked in multi-stakeholder groups and were given printed copies of text (enlarged onto A3 paper) taken from the source guidelines. Initially, they were asked to read the guidelines and use colored highlighter pens to identify ideas that they considered to be: valuable and relevant ideas to include in minimum standards for ICTD/ICT4D (green); items that seemed inappropriate for ICTD/ICT4D (red); items that might require more debate within the ICTD/ICT4D community to decide what guidance should be given (blue).

Participants then were asked to cut up the paper and cluster the text snippets around a set of headings that had been predetermined by the co-facilitators, based on headings used in other sets of standards. This involved sticking the extracted cut-out texts to flipchart-sized topic pages that were located around the room. The exercise also allowed participants to identify potential new headings that might be required for ICTD/ICT4D. Further, each participant could use colored sticky notes to contribute further ideas, concerns or comments to each section. Figure 2 shows images from the activity [permission to use the image was given by participants].

(a)

(b)

Figure 2. Reviewing and selecting texts from existing standards documents.

Thus, the workshop output was a new set of headings, and for each heading, a set of statements that were variously recommended for inclusion, exclusion or further discussion. Table 1 shows both the set of headings that emerged from the workshop, and the final set of headings from version 2.0 of the standards.

Table 1. The set of headings in the minimum ethical standards.

Initial Headings proposed at ICTD2016 workshop, Ann Arbor	Headings in the final document 2018
	Introduction
Preamble	Preamble
	1. Basic principles
	2. Positionality
Cultural awareness, contextuality	3. Cultural awareness and contextuality
Using appropriate research methodologies	4. Appropriate research methods
Reciprocity & partnerships	5. Reciprocity and partnerships
	6. Honesty and realism
Links to companies / organizations / consultancy	7. Links to companies, organizations, consultancy or government
Gifts, bribes, corruption, conflict of interest	8. Gifts, bribes, corruption, conflict of interest
Action research: authentic participation	9. Action research and authentic participation
Action research (sustainability)	*[integrated into 9. above]*
Findings reporting and dissemination	10. Findings, reporting and dissemination
Discrimination, positionality	11. Accountability to participants and accuracy of reports
Risks	12. Risks
Vulnerable populations	13. Non-discrimination and vulnerable populations
Disclosure, consent	14. Disclosure and informed consent
Confidentiality, anonymity	15. Confidentiality and privacy
Action research: benefits & compensation	16. Acknowledgement of research participants
Data ownership, privacy	17. Ownership of data
Treatment of data	18. Treatment of data
Authentication / member checking	19. Designing technology in ICTD/ICT4D research
Fragments of text which were not glued to a board but were marked up and left in the room	20. Promoting ethical practice and oversight

4.2. Step 2: Sharing results online

To overcome some of the time restrictions and geographical limitations faced by interested individuals, a website was created (using WordPress) to report on progress, to share data from the first workshop, to invite discussion and for linking to other resources. The WordPress site permitted comments by anyone holding a WordPress account (which carries no financial charge), however no comments were made directly via WordPress. Once a draft set of principles had been produced, and the discussion was moved to Google Docs (see step 6), there was active engagement in reviewing the draft online.

4.3. Step 3: Transcribing and categorizing results

Next, we converted the paper data from the workshop into a single electronic document. Comments on sticky notes were transcribed. Highlighted text that had been drawn from existing sources was placed in a table for each heading, with the source identified. The color-coding was replicated using the word processor's highlighting feature. Using electronic searches with electronic cut and paste ensured accurate transcription.

We separated the collated data into three new documents consisting of (a) 'endorsed' positions, (b) positions that were 'proposed for rejection' and (c) a set of statements 'raised for discussion.' These four documents (of the full raw comments data; endorsed, rejected and to be discussed items) were then shared via the website to invite comments.

4.4. Step 4: Coding and clustering

After initially reviewing the endorsed positions and the positions proposed for rejection to identify any significant disagreements, our focus moved to the issues identified as requiring additional discussion by the ICTD/ICT4D community. Of the 19 headings, there were issues raised for debate

under 13 headings, and only six headings where no issues were raised or no disagreements found. The headings reflecting general agreement were: Findings, reporting and dissemination; Vulnerable populations; Action research benefits and compensation; Gifts, bribes, corruption, conflict of interest; Links to companies, organizations and consultancy; and Action research (sustainability).

To stimulate focused discussions, we conducted a new, bottom-up clustering of the statements raised for debate, to identify a smaller number of thematic areas to focus on in subsequent discussions. The six themes that arose were:

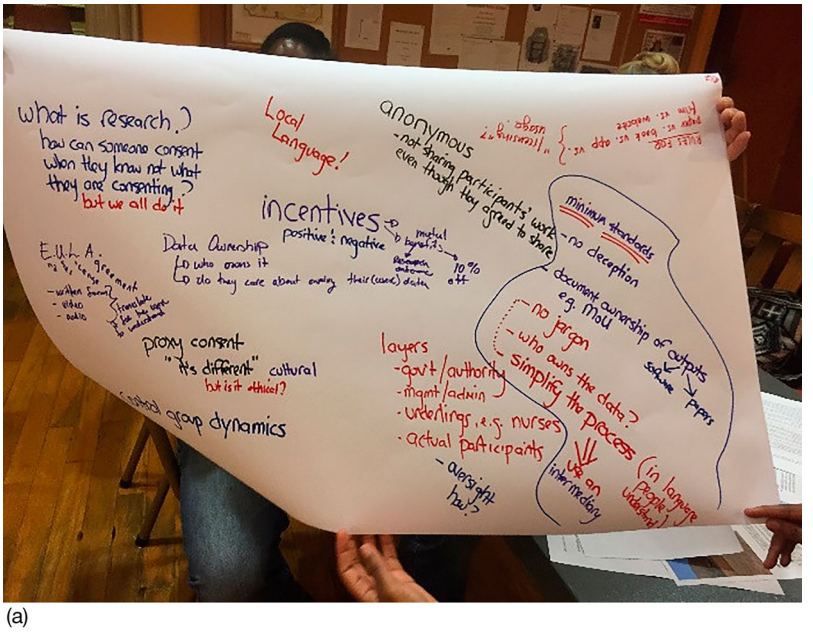
- Automatically capturing and analyzing (big) data;
- The meaning and practicalities of genuinely informed consent;
- Striking balances between privacy, rights to anonymity, rights to acknowledgement, openness of data, maintenance of records for historical purposes and protecting participants;
- Whether to recommend or mandate particular high-level design principles (e.g. design for sustainability) and if so, which principles;
- Ensuring 'fair shares' of the benefits from research and innovation activities (including rewards for innovative ideas, retaining rights over local knowledge, compensation to participants etc.);
- A cross-cutting concern of promoting ethical practice and appropriate oversight in the research, practitioner and donor communities.

For each of these topics, the authors wrote an introductory text for the website, setting out the problems highlighted by the previous exercises, and indicating some background resources. Under each topic there was the invitation to engage and comment.

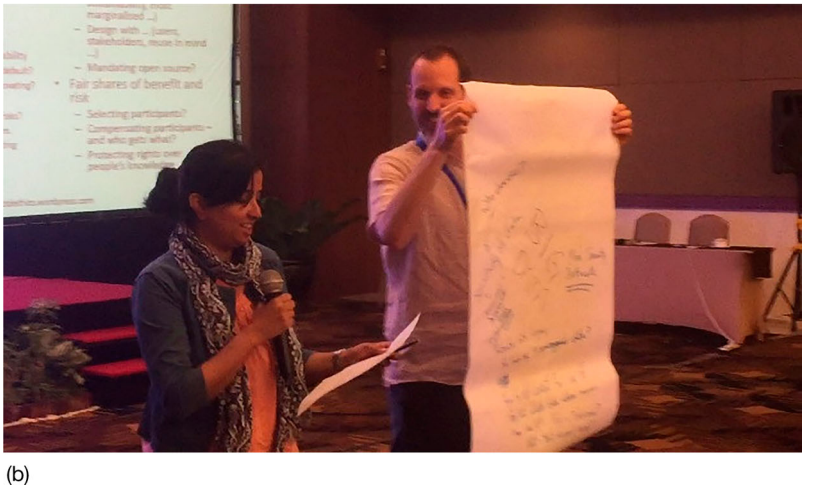
4.5. Step 5: A series of discussion workshops

We then conducted a series of three interactive, regional discussion workshops with existing clusters of ICTD/ICT4D researchers and research-active practitioners. These workshops, held over a 5-month period, were with (a) the London ICT4DMeetup, a non-profit professional network of over 1000 practitioners and researchers (31st Jan 2017, 23 attended, 4 of them women, 5 people of color, plus both co-authors as facilitators); (b) with the Cape Town ICTDevers group in South Africa which brings together researchers, students and practitioners in ICTD/ICT4D (20th April, 2017, 24 attended (plus one co-author as facilitator, including one person who had participated in the Ann Arbor workshop) of whom about 60% were people of color, and about 40% were female) and (c) with delegates at the IFIP WG 9.4 2017 conference in Yogyakarta, Indonesia, (19th–22nd May, 2017, 35 attended, including one person who had also attended the Cape Town meeting, and three people who had attended the initial workshop at ICTD 2016, plus one co-author as facilitator).

All workshops followed a similar format, consisting of a presentation of the project, followed by breakout groups to discuss each of the topics, using flip chart paper to capture ideas and observations. In each workshop, discussion groups reported back into a plenary session which was recorded to inform development of the guidelines. Using the six topics 'raised for discussion,' in the first workshop (in London) the discussions were conducted in two rounds of three topics so that each participant explored two topics out of the six. However, based on the experience in London, the subsequent workshops in Cape Town and Yogyakarta consisted of a single round of discussions with a breakout table for each of the five topics followed by a plenary discussion around the sixth, cross-cutting issue of implementing ICTD/ICT4D ethical standards. Thus over 90[4] different individuals provided inputs that informed the initial drafting of the standards. Figure 3 shows the process of reporting back from such workshops in Cape Town and in Yogyakarta.



(a)



(b)

Figure 3. Reporting back from group discussions.

4.6. Step 6: Developing draft guidelines and online peer review

We used the outputs from these workshops, together with existing guidelines from other domains, and relevant literature in ICTD/ICT4D ethics, to draft a possible set of minimum standards for ICTD/ICT4D research. In drafting, we used wording that allowed for a degree of flexibility to accommodate a spectrum of practices. Further the preamble states that the aim is not for the standards to make decisions for the researcher, but to serve as guidance while the researchers are autonomous moral agents. However, where their decisions diverge from the standards, an explicit justification, including on ethical grounds, is called for. The document was shared using Google Docs, inviting comments or suggested modifications. A link to the Google Doc was shared through the website and publicized on relevant mailing lists and via social media. Eleven individuals commented directly on the draft document. Discussion and peer-review of this draft was also the basis for an open

session at the ICTD 2017 conference in Lahore,[5] Pakistan (17th November, 2017, 25 attended, including two facilitators who had attended the ICTD 2016 workshop, many being researchers and students of Pakistani origin, although we do not possess data on the ethnic or gender mix at this session), and a session at the Monitoring, Evaluation, Research and Learning Technology (MERLTech) 2018 conference in London, UK (19th March, 2018, 24 attended, plus one co-author as facilitator).[6] Each discussion raised particular concerns, which guided amendments.

Discussions at the workshop in Lahore, Pakistan, raised concerns about the treatment of informed consent, particularly in cultures with more collectivist rather than individualist decision making. Informed by these discussions, wording was revised to indicate that discussing informed consent within community forums may be appropriate, but care should be taken because of unequal power relations. Further, such collective consent should not override an individual's right to control their own consent to participate or provide data.

At the workshop at MERLTech, much concern was focused on responsible management of data, with NGO representatives being concerned with their responses to the European Union General Data Protection Regulations (GDPR). The draft was edited to extend and strengthen discussion of data management, highlighting principles such as data protection by design, data minimization and data protection by default. However, the rapid emergence of new technologies for (big) data processing, and the complex and ongoing ethical debates that surround such processing, meant that it was not feasible to identify a clearly defined set of guidelines to treat as sufficient for 'minimum ethical standards.' The revised document sets out certain standards, but also encourages ICTD/ICT4D researchers to engage with ongoing ethical debates, suggesting the 'Responsible Data' community (https://responsibledata.io) as a possible starting point.[7]

In the on-line discussions, there was a concern with finding the right balance between on the one hand avoiding the risk of vulnerable people being exploited in research, and on the other hand the need to ensure that the concerns of vulnerable and marginalized groups are heard, and their priorities reflected in research agendas. The revised document extends the discussion of vulnerable populations by considering harms that may be imposed on groups by being expected to bear a disproportionate risk from research.

Over 55[8] different individuals, over 40 of whom had not previously been involved in developing the standards, provided feedback on the first draft.

4.7. Step 7: Publishing the standards

After these amendments, a second, revised version of the standards was published online in November 2018 (see www.ictdethics.org). Box 2 shows some quotations from the text. The standards were published under a Creative Commons Attribution-Non-commercial-ShareAlike 4.0 International License and placed on the website as well as on the authors' institutional repositories, allowing them to be easily accessed. This 2nd version is fixed and downloadable, however in the coming years further versions will evolve to reflect emerging understandings and to address new ethical challenges. A copy of version 2.0 has also been placed in a Google Document, with links from the website, with invitations for further comments and suggestions to guide future revisions.

Box 2 : A selection of quotations from the minimum standards

Responding to the issues of automated data collection:

'ICT provides many opportunities to collect data automatically by logging interactions with and through digital devices. The collection of such data, and use of the data should be properly justified in the context of the research, and should take account of the risks of future misuse of such data (e.g. undermining anonymization). Given that such data collection may be difficult for research participants to observe and monitor, care must be taken so that properly informed consent is obtained, and that the data is only used for the purposes for which consent has been given.' (p. 11- 12)

Responding to the problem of 'bungee research' and extractive research practices:

'ICTD/ICT4D researchers should seek exchanges and partnerships with local and national research institutions and academic colleagues in the areas and countries where the research is undertaken. […] Joint research partnerships should then lead to joint publications in local as well as international outlets, including in the local language. The publication pressures of Northern researchers should not be the only, or the dominant criterion in developing an appropriate portfolio of research outputs for a project.' (p. 4-5)

Responding to the problem of ICTD for market expansion:

'In particular, ICT4D research that advertises or imposes commercial technical products, solutions and services which do not correspond to local needs or priorities brings the field of ICTD/ICT4D into disrepute.' (p.6)

Responding to the problem of environmental impact and general wastefulness:

'ICTD/ICT4D researchers should not waste resources and should consider the environmental cost of research, as well as the time, energy, motivation and hope invested by research participants and partners into the research project.' (p.5)

Step 8: Adopting the standards

The standards were presented, distributed and discussed at the ICTD 2019 conference in Ahmedabad, India in January 2019. An open session was held to discuss routes to implementation of the standards with participants from different universities, international NGOs and funders. A short research note was included in the conference proceedings describing the process used for their development, and a poster was displayed. Delegates were alerted in the opening session to the existence of version 2.0 of the standards, and to our intention to discuss their adoption during the closing 'Town Hall' session of the conference. In the final Town Hall plenary session of the conference, a vote was taken whether the standards should be adopted for the ICTD conference series, with a overwhelming majority in favor (approximately 70 delegates supported, with 1 against and 3 abstentions[9]). The thus endorsed standards were subsequently integrated in the call for papers and review process for the ICTD2020 conference.

5. Discussion and reflections

In this section we reflect on the process, drawing on key concepts from structuration theory, in particular legitimation, before weighing up the achievements, limitations and future of the project.

5.1. Structuration and legitimation

Canary (2010) shows how professionals did not use centrally mandated policy documents in a fixed, codified way, but instead used their situated experience to interpret and enact policy in practice and to develop their own local documentation capturing their emergent interpretations. Thus the policy process is best understood not as a linear sequence of creation, adoption and control, but as dynamic knowledge construction within situated, collaborative social practice. Given that our ultimate aim has been to bring about changes in the social (and socio-technical) practices of ICTD/ICT4D research, it is useful to examine our actions as a social process directed towards achieving social change. Structuration theory is a macro-theory (Giddens, 1984, 1987) which conceptualizes structure and agency as co-constituent, a principle described as the duality of structure. All individuals have agency and can act in individual or collective ways. Structural conditions guide and constrain the individual, their choices and actions, and yet themselves are the result of the aggregated choices of individual and collective actions. Giddens (1984) highlights three interwoven dimensions of structuration through: signification, expressed through the interpretative schemes that are applied to assess interactions; legitimation, expressed through the norms of acceptable social behavior that may be enforced through sanction; and domination, in which control over facility and resources may be applied, enacting hierarchical power.

As co-facilitators we sought creative responses to the co-constituent nature of structure and agency, to allow participants to use their diverse resources when enacting their agency, within

the socio-material context in which our actions were embedded. Individual researcher behavior (agency) was constrained by formal policies and, where available, published ethical standards (elements of structure). On the other hand, the collective agency of these very researchers could be harnessed to co-create new, more appropriate standards for our field, thereby, to a degree, reshaping structures. Throughout there was a focus on the 'legitimation' dimension of structuration: identifying what norms of social, and researcher, behavior would be deemed acceptable in a global, diverse peer community. Only if there was legitimacy for both the process and the outcome would there be a basis for the new standards to be applied. Ultimately it was understood that peer self-governance and standard-setting could only result in widespread changes in practice if such standards were eventually backed up by a collectively agreed reward and sanction systems (what Giddens would call the 'domination' dimension of structuration). However, achieving such adoption would rely upon a process being seen as legitimate and on standards being regarded as helpful.

5.2. Working within structures

The facilitators and participants used their agency within those structures with the aim of influencing and altering those structures. Operating independently from external funding, our work tended to follow the contours of an existing landscape of encounters. It was appropriate to hold some of the workshops as part of the same conference series (ICTD) where the call for ethical standards had arisen. The established rules (legitimization and domination aspect of structuration) of the conference then demanded that 'open sessions' were composed of either one or two 90-minute sessions. Therefore, a single session was chosen for the first workshop because a double session might have resulted in lower attendance.

However, the 200–500 researchers attending each ICTD conference do not represent the whole community of ICTD/ICT4D researchers, as many researchers attend other conferences such as IFIP WG 9.4, e-Learning Africa, ICT4D, COMPASS, CHI etc. In particular, only a few ICT4D practitioners who also undertake research attend the ICTD conference series. This prompted us to hold, in addition to the session at the IFIP WG 9.4 conference, discussion and review workshops which included both academic researchers and practitioners who undertake research: the London ICT4D MeetUp, the MERLTech conference, the Cape Town ICTDevers group.

In participatory work we frequently discuss the need to respect the existing structures and practices of a community, and fit our work around them, rather than imposing 'our project' onto potential participants who have limited time and other priorities. We applied the same principle to the researchers who participated in the co-production process. Mindful that this was not everybody's primary priority, yet that we shared an interest in this change, we followed the grain of the community, its natural assemblies (conferences, workshops), and communication practices (oral and written, online and offline). The levels of engagement in the different processes reflect this. For example, many more researchers were willing to engage in short (e.g. 90 min) workshops that allowed them to consider and discuss ethical issues and informally make suggestions, than voluntarily devote substantial time to read, review, comment upon and suggests detailed edits to the draft standards via Google Docs.

Our discussions with participants about implementation addressed focal moments of power in the community where ethical review is currently implicit (e.g. funding decisions; publication decisions). The process sought to engage key actors (funders, conference chairs, conference programme committees, editorial boards, reviewers). As expected in structuration theory, by doing so, we implicitly and unavoidably contributed to the reproduction of these established power structures while attempting to adjust them.

5.3. Inclusivity

Reflecting on the relative inclusivity of the process, undertaking multiple and regionally targeted workshops permitted a wide range of voices to contribute, but this was still limited to those

attending these events. For example, researchers based in the global North are over-represented in many global academic and professional conferences, and this was true of many of the ICTDEthics workshops. Further issues applied to specific workshops, for example, the ICTD 2017 workshop in Lahore, Pakistan resulted in very limited engagement from researchers who were based in India, and the London MERLTech workshop primarily involved people of European or North American descent. Whilst we actively sought to create open spaces, and encourage diverse groups to engage with the project, our decision to proceed without a lengthy process of applying for funding, and to work within existing events and networks, inevitably retraced not just the contours of these events but also the diversity patterns (or lack thereof) of these gatherings. Likewise, the website and Google Docs could be claimed to be 'available to anyone,' but of course this online channel also required a number of material and non-material resources (as defined and listed in Kleine, 2013): educational resources (digital literacy, literacy, command of English language), time, social resources (to become aware of its existence), psychological resources (confidence to engage in a global consultation), material and financial resources (internet access), cultural resources (understanding of academic review etiquette) etc. The very focus of the coordinated effort on this particular form of output – a document of minimum standards – relied on accepted and shared understandings (signification aspect) within the community of the approximate shape of this output. Furthermore, some individuals might make specific ethical choices not to use technologies or platforms offered by particular organizations, for example some people choose not to use Google Docs because of concerns about the company's track record on tax evasion and data privacy. Researchers with an interest in ethics are relatively more likely to also be sensitive to such questions in their usage choices.

All participants in the process had, to some degree, to fit into a process and engagement format as delineated by the facilitators, and had to engage in highly specialized discourse (the signification aspect of structure) of research ethics. All of this created invisible, tacit, barriers around a process which was designed by the facilitators to be open to all with low barriers to entry in mind. Thus while this process is one of the most inclusive to date and compares favorably with other similar processes, much more can still be done.

5.4. Legitimacy

A key focus throughout was on legitimation. On the one hand, the newly co-created object, the minimum standards themselves, is intended to help set norms. The co-creation process itself is an example of structuration undertaken by agents in the Giddens' sense. The choice of words used, and the connections to other related discourses these imply, reflect the signification aspect of structure. The normative perspectives and community values made explicit through the standards correspond to Giddens' legitimization aspect of structure. The adoption and application of the standards within processes of peer review and research governance reflect what Giddens would refer to as the 'domination' aspect of structure. Further, whether the standards will be successfully taken up as the new norms will depend substantially on the perceived legitimacy of the practices and processes used to develop them, and a resulting sense of ownership. We consider legitimacy below in the dimensions of credibility, peer review, uptake and endorsements.

In terms of credibility and peer review, drawing upon related, established research ethics documents from other disciplines was helpful, transferring legitimacy from the peer reviewed knowledge in those fields. A further step was the sharing of the collated results from the first workshop at Step 3. The subsequent steps were also shared using the website, so that the online discussions are available for inspection.[10]

In terms of legitimacy derived from formal democratic procedures, at the time of writing the minimum standards have been overwhelmingly endorsed by vote in the 'Town Hall Meeting' the ICTD2019 Conference in Ahmedabad, and were subsequently used within the review process for the 2020 edition of that conference series. A further leading international ICTD/ICT4D conference

series, IFIP Working Group 9.4. was also approached, and their representatives explained that a wider ethical standards initiative within IFIP as an organization was soon going to commence. Despite this being a more centralized process, there may well be opportunities arising to build links with it.

5.5. Further steps

A set of printable worksheets and learning materials that include ICTD/ICT4D ethics discussions and the minimum standards is currently being prepared for distribution via the Digital Impact Alliance, an influential multi-stakeholder network. Further, there are ongoing discussions with other key NGOs and funding bodies in ICTD/ICT4D about the possibility of endorsing the standards.

In future work, further stakeholders can be engaged. In particular, members of the communities with whom ICTD/ICT4D researchers work could be more fully brought into the co-production process of the next version of the standards. With appropriate funding, such community members could be commissioned (and compensated for their time) to reflect and comment on the current version of the standards (version 2) and contribute to refining them into version 3. Research participants and community members might have limited incentive to spend valuable time and effort to engage in such work, thus a level of funding would support compensating people for their time as they would convene, review the standards, evaluate their usefulness, and consider ways to implement them to hold researchers to account. Further useful resources, such as learning materials that provide an overview of key points, might allow groups of research participants and other stakeholder groups (e.g. NGOs, CBOs and funding organizations) to think through how the standards relate to researchers and research projects. Involving communities directly is still not the norm, but some other projects have started to develop, in such direct interaction, some resources to support ethical governance of external researchers (Banks & Brydon-Miller, 2018; South African San Institute, 2017; Zaman et al., 2016) and we strongly endorse these efforts. The outputs from such discussions with community representatives have however so far tended towards statements of high-level generic principles, rather than going into very practical detail about the ethical handling of research processes. A review of a concrete, practical standards document would thus be an innovative approach.

6. Implementation and Outlook

In order for the ethical guidelines to be widely implemented in practice, they should be: (i) Integrated into ICTD/ICT4D curricula and related education and training in relevant disciplines; (ii) Integrated into ethical review and approval processes at universities, government, NGO and business organizations undertaking ICTD/ICT4D research, where they might usefully supplement less tailored guidelines; (iii) Used as a benchmark when examining undergraduate, Masters and PhD research projects; (iv) Used as an orientation in cross-disciplinary peer-review, including for conferences and journals in this field. To attain this, a culture change is needed. Firstly, towards an expectation that conference papers and journal articles drawing on empirical data need to make their approach to research ethics explicit. Secondly, a change is needed towards an expectation by funders and grant application reviewers that research ethics have been explicitly considered at the funding stage.

Our hope is that the standards will be consulted by researchers, and will be considered in ethical reviews, grant applications and reviewer comments. However, professionals apply codified policy documents by interpreting and enacting them in line with their professional identities and situated experience (Canary, 2010). These minimum ethical standards have been collectively developed, constructed and agreed, and can continue to be embodied, enacted, contested and adapted by fellow ICTD/ICT4D researchers. It is because codified standards always need to be interpreted in real-life application that we have sought a balance between definitive guidance and flexibility in the wording. This serves to highlight where, within a framework of minimum standards, the autonomy of the researcher as a moral agent and decision-maker on research ethics always needs to be

recognized and protected. These standards are also designed to trigger ongoing individual and collective reflection in the space where policy, professional identity and situated practice meet. This process of interpersonal, intercultural, interdisciplinary and inter-stakeholder dialogue can be as valuable as the standards themselves. Further, the process of developing these standards may well be useful and transferable to other interdisciplinary fields facing the daunting task of self-regulation in the absence of joint fixed disciplinary norms.

We sincerely thank all contributors to the process who came together in the hope to see a participatory process, and then broad adoption of the standards. We hope that the standards, and the ongoing dialogue around them, will result in further reflection and good ethical practice in ICTD/ICT4D research.

Notes

1. A short summary of the process was illustrated on a poster, produced by the authors, for ICTD2019 and accompanied by a 5-page paper (Dearden & Kleine, 2019).
2. Personal communication from Glyn Williams, former DARG Chair.
3. We did not collect formal data about the gender or ethnicity of participants in the workshops. In some workshops we have been able to report on this aspect based on our interpretation of photographs that were taken (with permission) during the sessions. Of course, our interpretations of people's gender or ethnicity based on physical appearance may not correspond to people's own self-identification (and further, gender is not binary). We offer approximate numbers only.
4. 90 is a conservative estimate that takes into account a small number of researchers who may have attended more than one workshop.
5. The Lahore workshop was facilitated in person by Melissa Densmore and Linus Kendall with the authors participating remotely.
6. We do not possess data on the gender or ethnic mix of the participants in the MERLTech workshop.
7. See also the Responsible Data Management Training Pack developed by Oxfam https://policy-practice.oxfam.org.uk/our-approach/toolkits-and-guidelines/responsible-data-management
8. 55 is a conservative estimate that takes into account a small number of researchers who may have attended more than one of the review workshops, or who attended a workshop as well as commenting online.
9. The number of votes in favor was not formally counted (only those against and abstentions), and there were between 70 and 80 people in the room.
10. We have not published detailed content of the discussions at the various regional workshops, in line with the basis on which participants consented to participate

Acknowledgements

We would like to thank all the people who contributed time and thought to the collaborative process of developing these standards. In particular, we would like to thank our co- facilitators at the Cape Town ICTDevers workshop (Melissa Densmore, Bill Tucker and Colin Stanley), at the Lahore ICTD 2017 workshop (Melissa Densmore and Linus Kendall), and at the London MERLTech workshop (Kecia Bertermann) as well as all the participants from the ICTD and IFIP 9.4 conference series, Cape Town ICTDevers, London ICT4D MeetUp, and MERLTech communities who participated in the workshops, as well as those who participated online. Further, we would like to thank the anonymous reviewers and the associate editor for their helpful comments.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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