

Mapping Dialogue and Argumentation in International Development: The Case of Compendium and OpenLearn LabSpace

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Position: We should investigate software tools to augment ID discourse

My interest is in how we can co-design software tools, digital literacies and sustainable work practices such that used appropriately, we can augment learning conversations, argument analysis, and design deliberation in International Development contexts.

The position I offer for this workshop is that International Development (ID) could in principle benefit from *human-centred tools to improve the quality of discourse*. This follows from three lines of thinking: (1) it is a given that ID is an inherently complex field, with deliberation over many issues typically interweaving political, ethical, cultural, economic, technical, logistical and scientific strands: in short, the content and structure of ID debates are complex; (2) the only way that anything is accomplished in international development is through dialogue, face-to-face in order to build and maintain trust, but supplemented by virtual/asynchronous discussions (which might even improve on conventional meetings); (3) in the context of education as a key ID challenge, we know that learning occurs best through constructive dialogue and argumentation, both with oneself, and with peers.

Together, these three strands foreground “discourse” as a central theme in ID, and in today’s networked world (recognising that internet access in developing countries is often far from ideal), these motivate action research into how software tools could support discourse. This is a broad term intended to encompass all forms of discussion and argument, ranging from the real time mapping of contributions in meetings, to the asynchronous analysis of ID problems and their associated debates. All of the above can be conducted in both physical meeting as well as online.

As evidence for the value of pursuing this line of enquiry, I outline several recent ID applications of a strand of human-centred, dialogic computing that I call [Hypermedia Discourse](#). Given the importance of education in ID (both academic and vocational), this work also intersects with the [Open Educational Resources](#) movement which seeks to improve global access to educational resources from leading institutions. Two software environments are described, [Compendium](#) and [OpenLearn LabSpace](#).

There is not space to develop the argument for the centrality of dialogue and argument in ID and learning, so this will be left as given for now. I focus on characterising the problematic nature of discourse in an ID context, before very briefly summarising our experience with tools to support ID by mapping the structure of various kinds of discourse.

Varieties of discourse, varieties of challenge

Challenges to effective dialogue. There are many obstacles to effective dialogue, including: managing power imbalances between stakeholders (e.g. political, material, educational, cultural), recognising and integrating differing perspectives, building ownership of decisions, making rationale transparent, and demonstrating that stakeholder views have been taken into account. While one does not have to look hard to find evidence of these in many contexts, some of these are more acute in ID contexts, particularly those concerned with differences in power and perspective, when the dominance of Northern value systems, and English as the working language, can create disproportionate imbalances.

Challenges to the analysis of wicked problems. ‘Wicked problems’, characterised by design and planning theorist Horst Rittel in contrast to ‘tame’ well understood problems, are hard to define, involve stakeholders with different agendas and solution criteria, are changed by attempts to solve them, and combine ‘hard’ technical/scientific issues with ‘messy’ political, ethical and social implications. Urban and environmental planning, creative design, strategic planning, counter-terrorism and almost all government policy planning meet this profile; ID is a wicked problem par excellence.

Mapping information, issues, discussions and arguments in ID

Wicked problems require an approach that prioritises the process of co-inquiry through dialogue, and where necessary, argumentation. Hypermedia Discourse tools assume from the start (in their conceptual models, notations and user interfaces) that there is always more than one perspective, and provide ways for stakeholders to visualise and critique the structure of a discussion or argument in order to clarify the key issues, the possible courses of action and their strengths/weaknesses. In so

doing, of course, it may become apparent that there are different assumptions about the problem and criteria for success. Various applications are now summarised, and will be demonstrated more fully at the workshop.

Capturing and indexing ID staff experiences across countries. Compendium was used to capture and index all the plenary discussions at a week-long conference in South Africa, which brought together ~20 national project leaders from the UN International Labour Organisation to exchange experiences in using an ILO methodology for HIV/AIDS education in the workplace. The result was a visual database in the form of Dialogue Maps organised by session, but also indexed conceptually through thematic maps using Compendium's "tagsonomic" indexing scheme. This enabled participants to navigate every question, answer and argument, as well as to view related nodes in the network by theme and nationality. A similar exercise was conducted for the World Vision relief, development and advocacy organisation, to analyse the reports from ~20 national workshops reviewing experiences with a methodology. The product was a conventional prose summary distilling the emergent themes, with embedded links drilling down into the underlying hypertext network to enable interested readers to trace in more detail how each country had contributed to each theme. These hypertexts were then published on Web intranets accessible through standard browsers.

Tackling inequalities in educational access with Open Educational Resources and e-Learning tools. Universal primary education is one of the UN Millennium Development Goals, with secondary and higher education recognised as a key trajectories thereafter. In the Open University's [OpenLearn](#) project we have been designing an approach to OERs that combines the release of distance-learning materials as Creative Commons licensed web resources, with an open source e-learning environment (Moodle) for learners and educators to collaborate as they study, edit and annotate the materials. Compendium is used as a knowledge mapping tool to annotate resources, map the concepts and arguments in learning resources, and sequence resources into learning paths. It was deemed particularly important to support dialogue and argument mapping in order to enable the expression of diverse perspectives on the materials released by the OU. While OU courses are recognised for their authority and embedded pedagogy, they are not the final word: the Web 2.0 paradigm moves us towards user-provided content and filtering, so the LabSpace makes possible the annotation, reversioning, discourse and argumentation that was previously detached from the source materials, so we can experiment with the open source dynamic.

Knowledge mapping to empower indigenous peoples in natural resource management. The [ECOSENSUS](#) e-social science project is supporting collaborative natural resource management between a European team and indigenous peoples in Guyana. Given the disparities in knowledge and power in such a project, central to our work are issues of stakeholder empowerment in geographical modelling, interpretation and decision making practices. We have integrated an open source GIS modelling tool (uDig) with Compendium, to enable participatory deliberation about the implications of the spatial models. The initial feedback from time spent with the Amerindians has been encouraging, where they have readily engaged in the creation of concept maps. Within 20 minutes of demonstration they were able to develop their own maps, showing what they understood of natural resource management within the region, how they understood the decision making process, and how they would like to take the decision making process forward. We were also struck by the fact that they also asked us to change some icons to imagery more familiar to them, reflecting a degree of ownership of the tool. The strategy we are taking to making our intervention sustainable is to develop indigenous staff capacity through learning resources published as OERs in the LabSpace (see above). Another strand of this project has been to build a set of Compendium templates (visual scaffolds for conversation) which use [Critical Systems Heuristics](#) to promote systems thinking about the unintended impact of information systems, particularly on those who may not have a voice.

Reconnecting migrants through online diaspora networks. Migrants who are successfully integrated into the working world of a receiving country often have a strong commitment to work for the well-being of their country of origin. The potential for "brain gain" (as opposed to the more familiar "brain drain" problem) lies in the capacity of migrants to mobilize the knowledge and skills available to them in their host countries, to benefit development back in their country of origin. UNESCO's International Migration Programme has, as one of its goals, to strengthen the capacity, sustainability and effectiveness of diaspora networks. The [Diaspora Knowledge Networks](#) (DKN) project aims at better understanding how this mobilisation can be enacted through the use of information and communication technologies. Compendium is being piloted to support Colombian/French scientific exchanges over soil and crop technology, and the LabSpace will be trialled as a portal for the co-development of OERs.

Related work. Our applications of Hypermedia Discourse tools in other fields with relevance to ID, include support for rapid situation analysis and decision making in [Emergency Planning](#), mapping the structure of contentious policy debates such as the [Legitimacy of the Iraq War](#) or the [Meaning of Citizenship](#), the analysis of [Scientific Literatures](#), and the publishing of Open Access Journals with innovative [conversational, non-anonymous peer review](#) for emerging, multidisciplinary fields.

In conclusion, software tools for mediating discourse will only work if they are sufficiently user-centred not to disrupt the very process they are seeking to augment. The work outlined in this paper is offered as evidence that Hypermedia Discourse tools for mapping dialogue and argumentation have potential in ID contexts, and I welcome feedback from both the UCD and ID communities. [Compendium](#) and [LabSpace](#) are also freely available as supported software tools.