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Lessons from Laos: selecting appropriate communication media for context

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Abstract

Current agricultural research depends on complex contexts that can impose major barriers for communication within geographically dispersed research teams. Such barriers are multiplied where team members originate from and operate in contrasting cultures and economic circumstances. A case study based in the Lao People's Democratic Republic (PDR) showed how to identify such barriers between Lao and Australian scientists using transcripts of 30 interviews with these groups. These were analysed using grounded theory analysis to identify these barriers which were operationalised to construct an assessment tool — I-CHET. This tool was subsequently applied to nine online communication technologies used by the interviewees to identify the technology that displayed the fewest problems regarding these barriers — email, and those with the most problems — websites and Skype. The study highlighted the complexity of communication barriers for international research teams, beyond economic and online infrastructural constraints, to include individual and cultural differences as well as language. By addressing these differences, project managers and funding agencies can maximise the benefits from research completed by international teams that provide vital agricultural knowledge and methodologies for many developing countries worldwide.

Keywords

Science and media; Science communication in the developing world

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Who has communicated with a group and thought afterwards, “I thought I had it right, but did they get the same message I presented?” If so, this commentary is for you, especially if you work with people from a variety of contexts and cultures.

Current scientific research is often based on collaboration in and between teams comprising members with different disciplines, cultures, nations, organisations,

time zones, knowledge access, political persuasions, personalities, and levels of economic development [Sonnenwald, 2007]. These differences can provide barriers and opportunities for team members working on 'wicked' and complex problems involving various elements of our societies and worlds.

When wicked agricultural problems occur, governments and international donor organisations call on multinational research teams to find how to maintain sustainability in or improve agricultural production in economically developing countries, while continuing to address rural poverty. While such teams are desirable as they incorporate important technical skills and access to funds, land and people, they can also comprise members from economically developed and developing countries that are geographically and culturally dispersed and embedded in different institutional and political contexts [Windsor, 2011]. When incorporated with member's differing individual personalities and past experiences, there are fertile grounds for communication barriers to be maintained between team members [Lau and Murnighan, 1998]. These barriers can reduce communication and trust between team members [Jarvenpaa, Shaw and Staples, 2004] and reduce team performance [Lauring and Selmer, 2010].

Faced with declining funds for international development, funding agencies have sought to reduce project costs, including budget items such as 'communications' and 'face-to-face meetings'. However, Chung, Kwon and Lee [2016] and Thatcher [2010] have demonstrated the importance of and advocated for initial face-to-face meetings between different cultural groups, to develop trust and relationships in multicultural teams [Chen, Chen and Meindl, 1998]. As funds from international and bilateral funding agencies have 'refocused' or diminished since the 2007 global financial crisis [Murray and Overton, 2016], agencies have sought to increase the use of information and communication technologies (ICTs) such as video conferencing to replace face-to-face meetings between collaborators in developing countries, especially for establishing, developing and managing development projects.

ICTs are used extensively by geographically dispersed agricultural scientists to circumvent the 'tyranny of distance' and fulfil the need for access [Ward and Given, 2019]. In their recent work in the Lao Democratic People's Republic (PDR), an economically developing country in South East Asia, the authors identified eight ICTs used extensively by Lao agricultural scientists and their collaborators in developed countries, particularly Australia. These included email, websites, Facebook, simple messaging systems on mobile phones, instant messaging, and the video-conferencing system Skype. While these ICTs have been introduced and used generally in Lao PDR since 2004, they have been used for many different purposes, both professional and personal.

Ward and Given's [2019] paper was part of broader study in Ward [2016] that also investigated research questions regarding communications within and between agricultural research team members working in Lao PDR:

- (a) What are the communication barriers that the team members from Lao PDR and Australia need to address; and,
- (b) Which ICTs best address these barriers?

Interestingly, multicultural agricultural research teams working in developing countries have received little academic attention, while international business and information technology (IT) teams have received considerable attention. For example, Shachaf and Hara [2007] developed their behavioural complexity theory (BCT) to highlight the contingencies that influence selection of appropriate ICTs by international IT teams. These team contingencies included dispersal over distance and time zones, social proximity, cultural diversity, the team task, individual preferences, ICT accessibility, and the initial ICT medium used by team members. Furthermore, Shachaf and Hara [2007] recognised that more than one ICT could be used to perform a team task, a more holistic and pragmatic approach to theorising on the use of ICTs by different groups and individuals reflected in the media synchronicity theory of Dennis, Fuller and Valacich [2008].

In order to identify these communication barriers, open ended interviews were carried out with 30 Lao and Australian agricultural researchers and managers living in Lao PDR and Australia and working in research groups in Lao PDR. The interview transcripts were qualitatively analysed using the social constructivist grounded theory methodology described in Charmaz [2014]. This analysis used open, axial and selective coding to identify five major themes for these barriers, related to relationships; language; individual attributes and characteristics; cultural differences; and the structural environment in which the teams worked. The themes were incorporated into a communication model that highlighted the communication barriers within these teams [Ward, 2016]. The major barriers included differences in personal and organisational trust, understanding of technical English (particularly for speakers of English for whom English is a second language), cultural understandings, access to economic and technical resources, political ideologies, and access to online infrastructure.

The barriers were operationalised to develop an assessment tool — the Intercultural Combined Heuristic Evaluation Tool, or I-CHET, as described in Ward and Given [2017]. I-CHET is based on Heuristic Evaluation, a methodology first developed in Nielsen and Molich [1990]. In the author's general version, ten sets of general questions (or heuristics) are used to assess an ICT's usability, or its ease of use, its efficiency and the frequency and seriousness of errors while in use. I-CHET incorporates a further eight intercultural heuristics with questions that assess an ICT's utility, or how well the ICT suits user needs, as described in Ward and Given [2017]. Thus, I-CHET can be used to evaluate both ICT usability and utility for different cultural groups.

The I-CHET was then used to evaluate the appropriateness of ICTs used for communication by research team members in Lao PDR. It was applied to the nine main ICTs used in the Lao context that team members had identified in the study's interviews [Ward and Given, 2019]. Subsequent analysis showed that, while some acclaim instant messaging or Skype as preferred ICTs for some dispersed multicultural teams [e.g., Hung et al., 2012], email was shown to have the fewest usability and utility problems for team members, which was supported by nearly all interviewees as the most preferred ICT for teams. This could be attributed to email's asynchronous nature, which interviewees believed provided two advantages for geographically dispersed research teams by:

- (a) allowing team members in Lao PDR and Australia to take advantage of time zone differences and work hours to send messages and attach written documents for collaborators to edit and return before the next working day commenced [Ward and Given, 2017]; and,
- (b) allowing Lao collaborators to seek assistance from local Lao colleagues to read, understand and craft email messages for their Australian colleagues. This allowed Lao members to maintain their own and their colleague's 'face' (or positive public persona), an important facet of Eastern cultural identity [Oetzel and Ting-Toomey, 2011].

Interestingly, I-CHET analysis identified the asynchronous websites of the [Australian Centre for International Agricultural Research](#) and [National Agricultural and Forestry Research Institute](#) in Lao PDR, and the synchronous Skype video system, as most problematic. Specifically, these ICTs had the most problems in enabling specific cultural cues to be recognised by different groups, and in enabling conversations to occur easily between team members. In addition, early social media that were assessed, such as Facebook, instant messaging and text messaging using a mobile phone, demonstrated mixed results in enabling communication between people from different cultures using different languages and alphabets, especially where English is a 'dominant' language. A detailed discussion of differences between the ICTs analysed in this study is presented in Ward and Given [2019].

This case study emphasised the complex and challenging nature of communication in the context of multinational research projects in economically developing countries. It challenges research project managers to identify and address possible communication barriers with their collaborators in their particular context when they establish international research and development projects. It suggests that a number of media may be required to encourage successful team collaborations, depending on the tasks to be enacted within the team, and that there is no one 'silver bullet' medium that will address all a team's needs for project communication and management. Finally, it presents I-CHET, or at least the methodologies described, as one tool to assist this evaluation for use in communication between team members.

The study also highlights the levels of context that should be addressed in considering communication barriers for research teams:

- At the macro-level, where differences in economic development and political ideology posed limitations for ICT use with restricted online infrastructure;
- the meso-level barriers caused by inter-organisational conflict and cultural variability; and,
- the micro-level roles of individual personal differences and past experiences.

Such complex considerations, which should address both the context in which dispersed research teams operate and the tasks that they are required to perform, can also change over time and circumstance. This complexity should be considered to maximise the benefits from research completed by international agricultural

research teams that provide vital knowledge and methodologies for social and economic development and sustainability in many developing countries worldwide. This work also suggests how other such complex communication contexts could be addressed when developing communication processes in dispersed teams.

References

- Charmaz, K. (2014). *Constructing grounded theory*. 2nd ed. London, U.K.: SAGE.
- Chen, C. C., Chen, X.-P. and Meindl, J. R. (1998). 'How can cooperation be fostered? The cultural effects of individualism-collectivism'. *Academy of Management Review* 23 (2), pp. 285–304. <https://doi.org/10.5465/amr.1998.533227>.
- Chung, E., Kwon, N. and Lee, J. (2016). 'Understanding scientific collaboration in the research life cycle: bio- and nanoscientists' motivations, information-sharing and communication practices and barriers to collaboration'. *Journal of the Association for Information Science and Technology* 67 (8), pp. 1836–1848. <https://doi.org/10.1002/asi.23520>.
- Dennis, A. R., Fuller, R. M. and Valacich, J. S. (2008). 'Media, tasks and communication processes: a theory of media synchronicity'. *MIS Quarterly* 32 (3), p. 575. <https://doi.org/10.2307/25148857>.
- Hung, S.-Y., Kang, T.-C., Yen, D., Huang, A. and Chen, K. (2012). 'A cross-cultural analysis of communication tools and communication outcomes'. *Journal of Global Information Management* 20 (3), pp. 55–83. <https://doi.org/10.4018/jgim.2012070103>.
- Jarvenpaa, S. L., Shaw, T. R. and Staples, D. S. (2004). 'Toward contextualized theories of trust: the role of trust in global virtual teams'. *Information Systems Research* 15 (3), pp. 250–267. <https://doi.org/10.1287/isre.1040.0028>.
- Lau, D. C. and Murnighan, J. K. (1998). 'Demographic diversity and faultlines: the compositional dynamics of organizational groups'. *Academy of Management Review* 23 (2), pp. 325–340. <https://doi.org/10.5465/amr.1998.533229>.
- Lauring, J. and Selmer, J. (2010). 'Multicultural organizations: common language and group cohesiveness'. *International Journal of Cross Cultural Management* 10 (3), pp. 267–284. <https://doi.org/10.1177/1470595810384587>.
- Murray, W. E. and Overton, J. (2016). 'Retroliberalism and the new aid regime of the 2010s'. *Progress in Development Studies* 16 (3), pp. 244–260. <https://doi.org/10.1177/1464993416641576>.
- Nielsen, J. and Molich, R. (1990). 'Heuristic evaluation of user interfaces'. In: *Proceedings of the SIGCHI conference on Human factors in computing systems Empowering people — CHI '90* (Seattle, WA, U.S.A.). New York, NY, U.S.A.: ACM Press, pp. 249–256. <https://doi.org/10.1145/97243.97281>.
- Oetzel, J. G. and Ting-Toomey, S. (2011). 'Intercultural perspectives on interpersonal communication'. In: *The Sage Handbook of Interpersonal Communication*. Ed. by M. L. Knapp and J. A. Daly. Thousand Oaks, CA, U.S.A.: Sage Publications, pp. 563–596.
- Shachaf, P. and Hara, N. (2007). 'Behavioral complexity theory of media selection: a proposed theory for global virtual teams'. *Journal of Information Science* 33 (1), pp. 63–75. <https://doi.org/10.1177/0165551506068145>.
- Sonnenwald, D. H. (2007). 'Scientific collaboration'. *Annual Review of Information Science and Technology* 41 (1), pp. 643–681. <https://doi.org/10.1002/aris.2007.1440410121>.

- Thatcher, B. L. (2010). 'Understanding digital literacy across cultures'. In: Digital literacy for technical communication: 21st century theory and practice. Ed. by R. Spilka. Hoboken, NJ, U.S.A.: Taylor and Francis, pp. 169–198.
- Ward, W. S. (2016). 'Exploring in-person and technologically-mediated communication within international agricultural research teams'. Ph.D. thesis. Wagga Wagga, NSW, Australia: Charles Sturt University.
URL: <http://trove.nla.gov.au/version/235880785>.
- Ward, W. S. and Given, L. M. (2017). 'Assessing technologies for information sharing in international research teams: developing an intercultural heuristic evaluation tool'. *Proceedings of the Association for Information Science and Technology* 54 (1), pp. 446–454.
<https://doi.org/10.1002/pra2.2017.14505401048>.
- (2019). 'Assessing intercultural communication: testing technology tools for information sharing in multinational research teams'. *Journal of the Association for Information Science and Technology* 70 (4), pp. 338–350.
<https://doi.org/10.1002/asi.24159>.
- Windsor, P. A. (2011). 'Perspectives on Australian animal health aid projects in South-East Asia'. *Transboundary and Emerging Diseases* 58 (5), pp. 375–386.
<https://doi.org/10.1111/j.1865-1682.2011.01216.x>.

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