

Social learning as a framework for building capacity to work on complex environmental management problems

Margaret Kilvington

Social learning is emerging as a useful framework to support collective decision making and action. This on-line article provides a concise review of the growing body of literature on social learning. It highlights how social learning is supported by a number of different elements. These elements can be broken down into three clusters: (1) learning and thinking; (2) group participation and interaction; and (3) social and institutional.

Context

In the current era of sustainability, environmental problem solving has been forced to recognise not only the complexity and uncertainty that surrounds situations, but just how important it is to work with the diversity of views held by would-be participants in the solution. Successful outcomes to environmental problems depend on the coordinated actions of decision makers at different levels, from paddock (land managers) to region (policy makers), and in any given environmental management situation agencies can anticipate multiple stakeholders will demand a voice in decision-making (Allen 2000). Therefore, environmental problem solving becomes not so much a matter of determining the solution as mediating a course between the many possible perspectives. Such a process requires that many viewpoints and sources of information be shared among the different stakeholders concerned, and then integrated to find solutions that will guide the way forward.

Important then to actively building capacity to work on these complex environmental management problems are frameworks by which we can understand the critical elements and actions required.

Social learning, in the context of environmental management, is increasingly regarded as a useful analytical and facilitative framework for collective decision making and action in complex resource management settings.

Social learning – roots and ideas

‘Social learning’ is a concept with a long history, divergent theoretical roots, and which appears in widely different contexts. For instance behavioural psychology uses the term social learning to refer to the kind of learning by individuals that happens through observation or interaction with their social context¹. In contrast in the fields of planning, policy making, and development social learning has been used to refer to: learning about social issues; learning by social aggregates; and learning that results in recognisable social entities such as collective-decision-making procedures (Maarleveld & Dangbégnon

¹ Albert Bandura (1977) is the name most commonly associated with the development of what was termed ‘observational learning’. *Attending* to a behaviour; *remembering* it as a possible model or paradigm; and playing out how it may work for them in different situations (*rehearsal*) are key aspects of observational learning (Parson & Clark 1995; Smith 2005)

1999). However, in recent times the concept of social learning has received growing attention in the field of environmental management. Here it is emerging as an overarching and normative concept reflecting growing understanding about the ways in which different agencies (e.g. planners, policy makers, NGOs) and different knowledge sources (e.g. science research, landowner, indigenous peoples) can be brought together to learn about and make decisions about complex problems. As such it provides both an analytical and facilitative framework that can be used to support collective decision making and action in complex resource management settings (Buck et al. 2001; Pahl-Wostl & Hare 2004; Keen et al. 2005).

Social learning for environmental management is based on constructivist ideas about learning². As such it treats the learning process for collectives and individuals as one of active interpretation of new knowledge, placing it in context with existing ideas and experiences. Meaning making through exchange, dialogue and even conflict is to be anticipated and designed for.

As a modern concept it has an involved relationship with a number of other bodies of ideas. It shares the premise that societal decisions can be improved through increased opportunities to practice dialogue and is concerned with how that dialogue is managed to generate ideas and action that reach beyond merely garnering consensus of opinion (communicative rationality – Habermas 1981; deliberative democracy – Forester 1999). Since it has evolved in response to the challenges of addressing complex problems, plagued by high levels of uncertainty, it embraces the need to inquire into the system as a whole and its interactions (systems thinking – Checkland 1985), to design response processes that are learning-based and adaptive (adaptive management – Holling & Gunderson, 1995; double-loop learning – Argyris & Schon 1978). and which link

² Following the work of John Dewey and Jean Piaget, ‘constructivist learning’ can be viewed as resting on four principle assumptions:

- Learners are diverse and unique, function independently and bring individual frameworks, experiences and constructions to knowledge.
- Learning is an active, constructive process. New knowledge is brought into relationship with existing ideas, causing active reorganization and prioritization, (hence the information received is not equivalent to the knowledge generated).
- Learning is highly influenced by context and experience (i.e. the learning environment **is** the environment).
- Learning is an inherently social process. Meaning making, feedback, and mutual exploration not only enrich the learning process, but are critical to the act of information interpretation and contextualization. (Smith & MacGregor 1992)

scientists, policy makers and other stakeholders as peer researchers (post-normal science – Funtowicz & Ravetz 1993). Thus the emphasis of the social learning approach is on designing a dynamic research and policy making process, directly interwoven with on-the-ground problem solving (Friedman & Abonyi 1976).

Social learning as a practical framework

Environmental issues are typical of what Rittel and Webber (1973) termed ‘wicked problems’. In short their characteristics are that:

- the problem is not understood until after formulation of a solution
- [Stakeholders](#) have radically different world views and different frames for understanding the problem
- Constraints and [resources](#) to solve the problem change over time
- The problem is never solved (Conklin 2005).

Typically the locus of response to any particular environmental management issue rests with a single agency (e.g. a regional or territorial authority), while the domain is actually influenced by multiple-agents (e.g. other agencies, landowners, resource users). The mandated agency responds by gathering data and opinions, which it analyses and interprets according to its most popular assumptions around how the problem is to be regarded, and ultimately determines a course of action. While this process may progress the understanding of the central agency it leaves the contributing actors unmoved in their own understanding and views and does nothing to challenge the existing problem construction – which may be critical to making progress. At best such a process may mean that the agency has managed to add to the interpretation of a complex problem. At worst it may entrench existing views, polarise stakeholders, and disempower key parties from taking needed action.

Social learning is potentially a practical framework for exploring the critical elements of complex environmental problem solving. These elements could be roughly grouped as the learning and thinking elements, the social/institutional elements, and the elements of group participation and interaction.

Learning & thinking elements of social learning

The learning and thinking elements of social learning have a number of critical elements. The learning itself can be regarded as having two parts. People need to learn both facts and information pertinent to the problem, as well as to develop better understanding of the processes of interaction and interpersonal relationships. This can be regarded as a need to focus on task-related and process-related information. This is differentiated by Weblert et al. (1995) as cognitive enhancement and moral development; and by Pahl-Wostl & Hare (2004) as soft relational and hard factual aspects of analysing and managing a human–environment system.

Social learning is dependent on double-loop learning (Argyris & Schon 1978) to challenge pernicious assumptions about the problem construction. This itself is dependent on skilled reflection processes (Keen et al. 2005).

‘Systems thinking’ is required to counter the blind spots of reductionist analytical traditions (Maarleveld & Dangbégnon 1999). It enables the re-examination of boundaries, both physical and ideological, and the identification and division of critical systems elements, human and non-human (Keen et al. 2005).

Finally, the complexity and uncertainty of situations in which social learning can operate as a useful framework dictates the need for an experimental approach that is explicit about expectations when designing management strategies and evaluation methods, and collects information to check assumptions with practice (Maarleveld & Dangbégnon 1999).

Group participation & interaction elements of social learning

There are two aspects of group participation and interaction that are critical to Social Learning:

- Effective multi-party communication. This includes using communicative competence, including dispute resolution and conflict management (Daniels & Walker 1996) or communicative rationality as the guiding principle for the interactions of scientists, resource users, planners and managers (Maarleveld & Dangbégnon 1999)
- Creation of collaborative platforms, i.e. the spaces – real or metaphorical – that need to be constructed so that stakeholders can interact and learn together (Buck et al. 2001).

Social & institutional elements of social learning

The social learning framework also draws attention to the social and institutional arrangements around inquiry into the problem situation, sharing of knowledge, and decision making and action. These include:

- Management of the political and decision-making context: e.g. balancing power differentials, managing constructive conflict, and providing access to real decision-making
- Structural openness, i.e. less direct control by government in favour of ‘socio-political governance’, which is more or less continuous processes of interaction between social actors, groups, and forces and semi-public organisations, institutions, or authorities (Kooiman 1993, in Fiorino 2001)
- Structured unpredictability, i.e. institutional arrangements that support open exchange and knowledge building amongst parties that avoid the common trap of favouring and validating the a priori knowledge held by agencies (Schusler et al. 2003).

Concluding comments

Issues around sustainability are increasingly characterised by complexity, uncertainty, and multiple social perspectives. Social learning provides a useful framework for working with these characteristics. Within this framework the importance of three main sets of elements are acknowledged. These elements are learning and thinking, group participation and interaction, and social and institutional. Importantly it is an approach

that empowers people so new discussions and pathways can be developed to chart new ways forward.

References

Allen WJ 2001. Working together for environmental management: the role of information sharing and collaborative learning. Palmerston North, Massey University. 279 p. Available online:
http://learningforsustainability.net/research/thesis/thesis_contents.php

Argyris C, Schon DA 1978. Organizational learning: A theory of action perspective. San Francisco, Jossey-Bass.

Bandura A 1977. Social learning theory. Englewood Cliffs, NJ, Prentice Hall.

Buck L, Wollenberg E, Edmunds D 2001. Social learning in the collaborative management of community forests: lessons from the field. In: Wollenberg E, Edmunds D, Buck L, Fox J, Brodt S, eds Social learning in community forests. Desa Putera, Indonesia. SMK Grafika.

Checkland P 1985. Achieving "desirable and feasible" change: An application of soft systems methodology. Journal of the Operational Research Society 36: 821–831.

Conklin J 2005. Dialogue mapping: building shared understanding of wicked problems. Chichester, John Wiley.

Daniels SE, Walker GB 1996. Collaborative learning: improving public deliberation in ecosystem-based management. Environmental Impact Assessment Review 16: 71–102.

Fiorino D 2001. Environmental policy as learning: a new view of an old landscape. Public Administration Review 61: 322–334.

Forester J 1999. The deliberative practitioner: encouraging participatory planning processes. London, MIT Press.

Friedman J, Abonyi G 1976. Social learning: a model for policy research. Environment and Planning 8: 927–940.

Funtowicz SO, Ravetz JR 1993. Science for the Post-Normal Age. Futures 25: 739–755.

Gunderson, L.H., Holling, C.S. & Light, S.S. Eds. 1995 *Barriers and bridges to the renewal of ecosystems and institutions*. New York: Columbia University Press.

Habermas J 1984–87. The theory of communicative action. 2 vols. Cambridge, Polity. Trans. from *Theorie des kommunikativen Handelns*, 2 vols (Frankfurt am Main, Suhrkamp, 1981) by Thomas McCarthy.

Keen M, Brown VA, Dyball R 2005. Social learning: a new approach to environmental management. In: Social learning in environmental management. Earthscan Press, UK, USA. Pp. 1–21.

Maarleveld M, Dangbégnon C 1999. Managing natural resources: A social learning perspective. *Agriculture and Human Values* 16: 267–280.

Pahl-Wostl C, Hare M 2004. Processes of social learning in integrated resources management. *Community and Applied Social Psychology* 14: 193–206.

Parson EA, Clark WC 1995. Sustainable development as social learning: theoretical perspectives and practical challenges for the design of a research program. In: Gunderson LH, Holling CS, Light SS eds *Barriers and bridges to the renewal of regional ecosystems*. New York, Columbia University Press. Pp. 428–460.

Rittel H, Webber M 1973. Dilemmas in a general theory of planning. *Policy Sciences* 4: 155–169.

Schusler TM, Decker DJ, Pfeffer MJ 2003. Social learning for collaborative natural resource management. *Society and Natural Resources* 15: 309–326.

Smith B, MacGregor JT 1992. What is collaborative learning? In: Goodsell AS, Maher MR, Tinto V eds *Collaborative learning: a sourcebook for higher education*. National Center on Postsecondary Teaching, Learning, & Assessment, Syracuse University, USA.

Smith MK 2005. The social/situational orientation to learning. *The encyclopedia of informal education*. www.infed.org/biblio/learning-social.htm (updated 30 January).

Webler T, Kastenholz H, Renn O 1995. Public participation in impact assessment: a social learning perspective. *Environmental Impact Assessment Review* 15: 443–463.

(Note: This document provides an introduction to social learning. It will be updated from time to time as Landcare Research gains more experience with the use of this concept and similar processes. Any reference to this document should include November 2007 as the date of publication.)

Your feedback or comments about any of the material on this, or related, pages is welcomed. Please feel free to contact Margaret Kilvington (E-mail: kilvingtonm@landcareresearch.co.nz)

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