ELSEVIER

Energy Policy 34 (2006) 2929–2940

ENERGY POLICY

www.elsevier.com/locate/enpol

Social learning and public policy: Lessons from an energy-conscious village

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Available online 28 June 2005

Abstract

Social learning is a prerequisite for sustainable energy use. This paper sets out some considerations from learning theory that offer a useful way of looking at domestic energy awareness and at actions to improve energy efficiency and conserve energy. Findings from a survey of residents of an English village that had won an 'energy-conscious village' competition are used to illustrate how individual and social learning can occur over a period of time, and how a 'top down' initiative may relate to other more informal sources of motivation and information. A model of learning about domestic energy use that incorporates awareness, action and feedback is proposed, and the implications for policy and further research are discussed.

Keywords: Social learning; Tacit knowledge; Feedback

1. Introduction

There is a growing recognition of the need for research into social learning processes as part of the research agenda for more sustainable livelihoods (Ekins, 2004). Sustainability in energy terms '*can be understood as a continuous learning process that occurs when a given society acquires the necessary knowledge to reduce its energy consumption … without diminishing its quality of life or creating new social inequalities*' (Tabara et al., 1999, p. 1). This paper considers some of the ways in which a community of householders learned about energy from their everyday experiences, actions, and varied sources of information. In doing so, it sheds some light on the construction and use of knowledge over time, and on the usefulness of 'top down' initiatives designed to raise awareness of domestic energy efficiency.

While there is a large body of literature on environmental education, research into adult learning about energy in informal contexts is relatively sparse and recent. In this journal, Fuchs and Arentsen (2002) have pointed out the need to emphasise learning and communication as an integral part of policy aimed at introducing green electricity. Pohl and Gisler (2003) have described how sustainable energy concepts must pass through different 'social worlds' on the journey from their origins to implementation, each with its own 'language', conventions and dynamics. Social learning by technologists through shared experience has been emphasised by Macdonald and Schrattenholzer (2001), and Kamp et al. (2004). Where non-specialist energy users are concerned, there has been a plea for energy education that respects and uses the processes and language of everyday life, applying the insights of the educationalist Vygotsky (Dias et al., 2004).

2. Contrasting views of learning: constructivism and behaviourism

The work of Vygotsky and his colleagues forms an important part of the foundation of social constructivism, a theoretical framework that emphasises the importance of social processes in enabling individuals

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doi:10.1016/j.enpol.2005.04.013

to make sense of their world (Vygotsky, 1962). In essence, constructivists hold that learners *create meaning* for themselves from their experiences of life: they 'construct' knowledge, making it their own, rather than imbibing it ready-made. Their learning therefore has subjective and affective (emotional) elements that come from interpreting data from their environment in the light of their own experience (Wadsworth, 1996).

The main challenge to constructivist thinking comes from behaviourism. The behaviourist position stems from a belief that human behaviour is solely a function of environmental variables—a series of learned responses to outside stimuli. Pure behaviourism specifically refutes the idea that patterns of thought are generated or constructed by individuals: 'It may be true that there is no structure without construction, but we must look to the constructing environment, not to a constructing mind' (Skinner, 1974, p. 117). Behaviour is therefore modified by means of external influences such as rewards, penalties and repeated messages: the answers to behavioural problems are to be found in the environment, not in patterns of thinking or relationships between individuals. Attention is focused on what is directly observable and measurable. This focus is acceptable enough to a constructivist, except when it draws attention away from the context in which the behaviour occurs and the thinking processes that accompany it. All three—the observable, the context, and the underlying processes—are considered necessary for explanation, understanding and prediction (von Glasersfeld, 1995). Differences between the two paradigms are summarised in Fig. 1.

2.1. Developing paradigms in energy research

An essentially behaviourist paradigm is recognisable in much of the literature on energy and behaviour, especially during the 1970s and 1980s (Katzev and Johnson, 1987; Cone and Hayes, 1984). Many studies demonstrated that, given the right conditions, individuals will respond to antecedent information, feedback and incentives by using energy more efficiently—especially if these environmental factors are used in combination. Yet the literature also pointed to a need to go beyond studying responses to external stimuli by paying attention to 'intrinsic motivation' and to cultural and infrastructural influences (Dwyer et al., 1993; Lutzenhiser, 1993; Lowe, 1996; Wilhite and Shove, 1998). The early, behaviourist-influenced, studies could demonstrate that certain interventions did or did not produce changes in behaviour, but they could not explain sufficiently *how* change came about—hence the need to broaden the field of study.

From the behaviourist paradigm…	*…to the constructivist*
Behaviour is a response to environment	Behaviour stems from environment + thought/interpretation
Interpersonal/structural relationships are irrelevant or marginal	Interpersonal/structural relationships are significant
Focus on interventions and outcomes: what happens in between is 'black boxed'	Focus on context and processes in relation to interventions and outcomes
Describe and analyse cognitive aspects of learning	Describe and analyse both cognitive and affective aspects of learning

Fig. 1. Aspects of behaviourist and constructivist paradigms.

Shifts to a broader and more flexible type of research almost inevitably mean a temporary loss of focus, along with loss of the drive and certainty (however illusory) that come from dealing with an issue in a simplified frame of reference. However, it is still possible to identify how complex factors in energy consumption can produce a desired outcome through synergy, and also to find clues as to the thinking involved. The widespread adoption of low-energy compact fluorescent lamps (CFLs) in Hungary, for example, was achieved by a combination of marketing campaigns carried out by competitive suppliers, steep increases in the price of electricity and a widely shared perception of CFLs as modern, useful and aesthetically pleasing. The last of these clearly relies on individual sense-making and on affective judgements: it could not be predicted by a standard economic or technical analysis. This combination of factors was strong enough to overcome a major disincentive to adoption of the new technology—CFLs cost approximately 20 times more than tungsten bulbs of comparable wattage (Urge-Vorsatz and Hauff, 2001). A comparable story of combined technical, social, educational and infrastructural factors comes from an analysis of the introduction of the EU Energy Label for cold appliances (Winward et al., 1998).

Both these accounts justify attempts to investigate the learning that underlies change. The dynamics of behavioural change are rarely simple, and constructivist theory has something valuable to contribute to analyses of such change precisely because it takes the synergistic building of patterns of thought and behaviour as axiomatic. An analysis of changing awareness and behaviour is attempted here, using a constructivist approach, and the concepts involved are outlined below.

2.2. Tacit knowledge, awareness, action and feedback

As the name implies, *tacit knowledge* is something that we are not usually aware of; it is contrasted with 'explicit knowledge'—the knowledge of facts, things or states that we are conscious of learning. Michael Polanyi, who formulated the concept, saw tacit knowledge as 'the fundamental power of the mind, which creates explicit