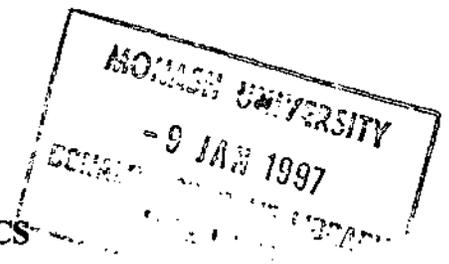


MONASH UNIVERSITY
FACULTY OF BUSINESS & ECONOMICS



**IN SEARCH OF ORGANISATIONAL
LEARNING: POLISHING THE SIGNPOST**

Fern Marriott and Michael Morrison

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Abstract

This paper is concerned with critically revisiting the concept of the learning organisation. We conclude that some conceptualisations of the term do not add any real value to the continuing exploration of the underlying dynamics of organisational learning. We suggest some refinements to the concept, directed at clearly positioning the critical focus of learning at the organisational level and on better understanding 'action-outcome' relationships. This has implications for how we think about other areas of management and suggests some future research directions. In addition to informing those new to the field, we see this paper as 'polishing the signpost' to help those interested in organisational learning reach greater consensus about the destination of their journeys.

IN SEARCH OF ORGANISATIONAL LEARNING: POLISHING THE SIGNPOST

INTRODUCTION

'Insanity is continuing to do the things the same way and expecting the results to be different'.

There is an increasing amount of data suggesting that the way the human race is managing its living is not sustainable. Methods and strategies successful in the past, no longer produce desired outcomes. How to interpret and act on this data is one of the issues being addressed by researchers of social, biological, organisational and economic systems.

Einstein suggests that:

The world that we have made as a result of the level of thinking we have done thus far creates problems that we cannot solve at the same level as they were created.

If this is so, then there is an impetus to experiment with new concepts, mental models and paradigms to see if any are particularly helpful in providing new insights into the problems we face.

Organisational learning is fast becoming the focus of many different disciplines and is being addressed in a broad range of literature including the areas of organisational theory, industrial economics, business, management, quality and innovation. The growing importance of this area has been further reinforced with several internationally recognised journals such as *Organisation Science* (1991), *Organisational Dynamics* (1994) and *The International Journal of Organisational Analysis* (1995), devoting special editions to this area, as well as new journals dedicated to publishing on learning organisations e.g. *The Learning Organisation*, which will have a special issue devoted to an Australasian perspective in 1997.

Working in the area of business management, we are particularly concerned with how organisations can become more in tune with their physical, social and economic environments on an ongoing basis. Trying to work within a dynamic systems framework has led us to seriously examine the concept of the learning organisation as a possible new and more useful way of thinking about organisations and their behaviour.

This paper critically examines the concept of learning organisations, some interpretations of the concept and associated issues. We conclude that some conceptualisations of the term do not add any real value to the continuing exploration of the underlying dynamics of organisational learning. We suggest some refinements to the concept together with some implications for future research directions. In addition to informing those new to the field, we see this paper as 'polishing the signpost' to help those interested in organisational learning reach greater consensus about the destination of their journeys.

SYSTEMS THINKING

Some models of Learning Organisations are no more than descriptions of well functioning organisations and do not offer the new ways of thinking deemed necessary for solving complex problems (Jackson and Keys, 1991). Underlying the models of learning organisations that are genuinely different from traditional approaches, is systems thinking. Most readers will be familiar

with the open systems model of organisations (e.g. Katz and Kahn, 1978). A systems thinker conceptualises organisational processes as if this model was genuinely dynamic. Systems thinking as we define and try to practice it, is characterised by:

- focusing attention on relations and connections between elements of the system rather than the individual components. These are essentially different once they are part of a system. Working to identify patterns of behaviour over time which might demonstrate regular relationships between components, is also an aid to understanding. The ability to see parts and wholes is a characteristic of systems thinking
- examining the causal dynamics of the current situation, rather than conducting a diagnosis or analysis from an external theoretical perspective. This involves accepting that many of the factors / variables in the situation are interdependent and fluctuating, producing multiple and interactive causes, with two way circular causality, the patterns of which may change over time. The situation is also likely to be self sustaining in that all the essential components are within the system. This implies that 'the cause' is not outside the system but within it, and likely to be the consequence of the interaction of the parts. This requires the ability to abstract from complexity, so that organising structures are revealed and not imposed (Salner, 1986).
- viewing past, present and future as interactive rather than linear. A person's expectations of the future will have been influenced by the past and will impact on the present and thus effect the future. The present and desired future will influence how the past is reconstructed.
- the 'self,' be it manager, researcher, consultant, is part of the system. In fact the system only exists in that it is seen by the 'self', so an 'objective' diagnosis is a nonsense from this perspective. It may well be that the 'self' will be a contributing factor to the problem. Recognising one's own 'world view' and thus one's construction of reality is an essential starting point for analysing a system. Consequently multiple perspectives of the situation are needed in order to better understand the whole, including one's own role. A constructivist perspective seems a prerequisite for this style of thinking, accepting multiple, changing realities as opposed to searching for one best view.
- the focus is on understanding the system and crafting the definition of problems rather than aiming for a 'quick fix'. Because of their complexity, systems can exhibit paradoxical behaviours - the outcome of an intervention can be the opposite to that intended. So simulation and modelling of the system can suggest ways of achieving a desired outcome, while the application of 'logic' may not. Thus a systems approach should lead to a deep understanding of the underlying dynamics of the situation and how these combine to form 'problems'.
- A systems approach confronts us to modify our 'science' to one that is synthesising, contextual, phenomenal and cogenerative (Evered, 1980). This, for traditionalists, may seem a somewhat heretical way of approaching organisational analysis, but it does offer a new way of approaching old, recurring problems.

This orientation provides an approach to the study of organisations that is quite distinct from an analytic, linear perspective. It can better accommodate the dynamic process of organizational learning, which is the focus of this paper.

WHAT IS A LEARNING ORGANISATION?

Organisational Learning

The application of systems thinking to the task of understanding how organisations develop and change has been a major impetus to the development of the concept of learning organisations. This way of thinking provides a rich framework for rethinking and integrating existing theories of organisational behaviour and change, organisational dynamics and strategy development. 'We are catapulted towards new code breaking and boundary crossing quests' (Ballantyne, 1994). It also provides a language and a potential new set of metaphors for communicating about what organisations 'do' or could do, in response to increasingly turbulent environments.

The concept of organisational learning has been recorded in literature for nearly 40 years. In the 1950's and 60's, Simon (1957, 1960) laid the foundation for the concept of the learning organisation. He defined organisational learning as the growing insights and successive restructurings of organisational problems by individuals, reflected in the structural elements and outcomes of the organisation itself.

Cyert & March (1963) saw learning routines as one of the fundamental organisational processes.

Cangelosi and Dill (1965) viewed learning as a series of interactions between adaptation at the individual or sub-group level and adaptation at the organisational level. (p. 200). These interactions are triggered by three kinds of stress: discomfort stress and performance stress, which influence individuals and sub-groups and disjunctive stress, which together with performance stress leads to organisational learning.

Argyris & Schon, (1978) focused on reflective processes or methods of learning for the individual and the connection between individual learning and organisational learning. They view learning at the organisational level as the development of new causal relationships between action and outcome. They see individuals as acting as agents for the organisation, whereby their individual learning gives the organisation a greater capacity to act effectively.

Huber's criticism (1991) of the lack of integration of existing writings is sadly very true. There are a number of profound insights made by 'early' writers that seem to have only recently been re-discovered. There is rarely agreement between or within disciplines as to what organisational learning is and how it actually occurs. Hence research and conceptual development have been retarded.

Some popular and academic literature seems to use 'the Learning Organisation' and 'organisational learning' indiscriminately, yet the distinction is important. All organisations learn to some extent. It seems obvious that organisations which survive beyond some critical point in time must be learning, in the sense that they are able to stay in tune with their environments externally, while internally the creation of culture and socialisation of members into that culture relies on learning processes (Nevis, DiBella and Gould, 1995, p. 74). Even those organisations that die may have been learning, but learning the wrong things, or not learning fast enough. So the concept of 'a learning organisation' is not discriminating in a practical sense and thus not particularly useful.

There are of course, some organisations that learn 'better' than others - their modifications are faster and less energy consuming; more closely matched with the internal and external requirements of the environment, changes are more fundamental or superficial as appropriate, with the consequence that

consistencies within and between the organisation's structure, processes and environment at any point in time are greater.

So if we are interested in a concept with some descriptive and prescriptive value, rather than just a metaphor, the fact organisations' learn is not the central issue. What is critical is how they learn, in terms of how they achieve speed, economy and accuracy, and what they learn. These are the areas of excitement. Thus in this paper, we are interested trying to gain a better understanding of how to conceptualise organisational learning in the most useful way. This should provide clues as to how to research organisations and help them structure and design themselves to facilitate new ways of thinking about problems that they face.

Learning is a function of the environment within which it takes place as well as the capacity of the learner. So it is critical to study the contextual factors that enhance or inhibit the flow of information and peoples' capacity to notice and access it, interpret it with high degrees of accuracy, and take appropriate action to ensure desired outcomes. This is a complex process. Not surprisingly, individual writers have tended to focus on particular aspects of the context in the models of organisational learning they have developed, e.g culture Schein, 1985; climate Macher, 1992; stress Cangelosi & Dill, 1965. However this is not adequate. Necessary and sufficient conditions need to be considered. Organisational learning is holistic in nature and needs to be conceptualised as such.

The overall field is still characterised by a lack of agreement on definitions and frameworks for conceptualising organisational learning and a lack of development of rigorous methodological approaches by which to study the development and functioning of learning in organisations. Added to this is the relatively low level of paradigm development in the study of organisational behaviour (Pfeffer, 1993) - a foundation for studying organisational learning. This scenario has implications for the diversity of conceptual and research approaches and thus suggests impediments to the development of an integrated, focused approach to the topic. One aim of this paper is to propose a more specific definition of organisational learning, which may stimulate a more focused approach to research and debate within the area.

The Nature of Learning

Learning can be defined as a process of gaining new knowledge or insight, leading to a modification of behaviour and actions, in order to achieve desired outcomes (Marquardt and Reynolds, 1994, p. 35). Both organisational and individual learning involves new insights or redefined rules for problem correction, a process of error correction and change, manifest in modified behaviour patterns. So not only is it sufficient for organisations to develop new ways of assessing and translating information, and having the capabilities of individuals improved, it is also necessary to translate these new ideas into action (Bouwen and Fry, 1991, Shiba and Graham, 1993).

Some writers however do not believe that an associated change in behaviour is a necessary adjunct to 'learning'. Duncan and Weiss (1979) argue that it is new knowledge that is the outcome of organisational learning and not any particular action, change or increased effectiveness (p. 84). Rather they argue that the new knowledge can make a change *possible*. Huber (1991) believes that learning occurs when the range of potential, rather than actual, observable behaviours is increased. In his framework, learning need not be conscious nor intentional, nor does it have to increase the learner's effectiveness. Yet he also proposes that organisational learning occurs when any organisational unit 'acquires knowledge it recognises as potentially useful to the organisation' (p. 89). This seems to suggest a conscious process. Friedlander (1983) suggests that learning may be

about changing cognitive maps or understanding of the situation, again without a necessary change in behaviour. Surely a change must manifest itself in some form of behaviour or there is no way of knowing that a change or learning has occurred.

We would argue that it is not just new content knowledge that is needed as an outcome of learning. Both the way information or knowledge is translated into a decision, and a strategy developed for implementation, require new paradigms of thinking or new process knowledge, in order to avoid the repetition of past errors. Thus we are talking about a much more fundamental change in decision makers' thinking styles and consequent behaviour than some writers have proposed to date.

Two Distinct Levels of Learning

To fully understand the concept of organisational learning, it is necessary to analyse the learning process and to distinguish between levels of learning.

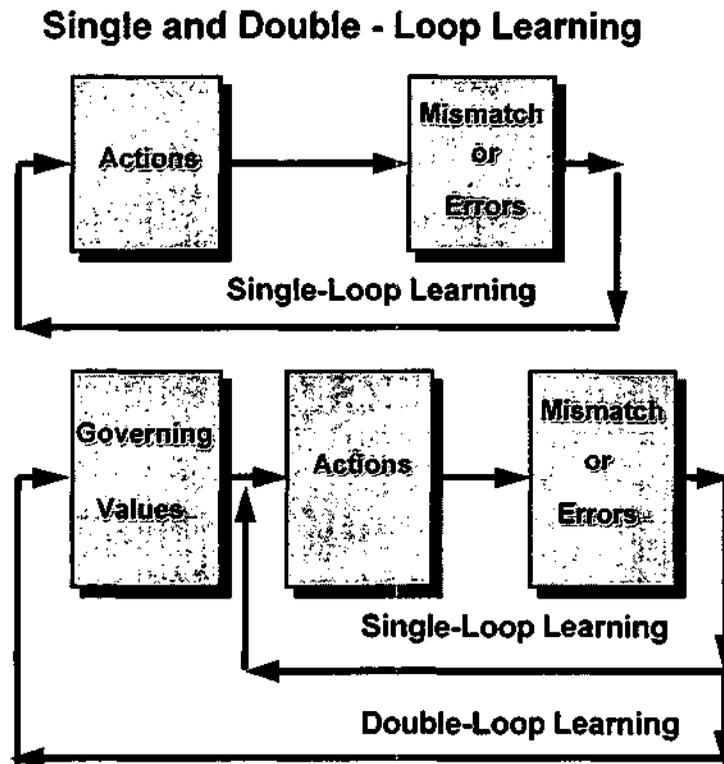
"When error detection and correction permit the organisation to carry on its present policies or achieve its present objectives, then that error-detection-and-correction process is single loop learning...Double loop learning occurs when error is detected and corrected in ways that involve the modification of an organisation's underlying norms, policies, and objectives." (Argyris and Schon, 1978: 3).

In Single-Loop Learning (shown in figure 1) members of an organisation respond to changes in their environment by detecting errors and correcting them, but still maintaining existing organisational norms. This level of learning does not encourage or result in any reflection or inquiry. Single-Loop learning focuses on solving present problems without any examination of the appropriateness of current behaviour nor the mindset (together with its historical and contemporary context) that produced the problem.

Dodgson (1993) equates Single-loop learning to activities that add to the knowledge base, competencies or routines without actually altering the fundamental nature of the organisation's activities. An appropriate metaphor for single-loop learning is a thermostat that adjusts itself without questioning its setting.

Double-loop learning not only monitors existing processes but involves the modification of organisational culture, policies, objectives, strategies and structure. Double-loop learning involves changing the organisation's knowledge base, competencies and routines (Dodgson, 1991). Thus problem solvers not only solve the immediate problem, they also broadly examine the causal factors associated with it - not just fixing a machine, and recognising the associated need for operator training, but also asking 'what is it about the system that resulted in the operators not being trained?' The distinction between Single and Double Loop learning is illustrated below:

Figure 1.



Senge (1992) refers to these learning levels as instrumental and generative, They are also referred to as maintenance and innovative (Bennis and Nanus, 1985), morphostatic and morphogenic (Smith and Tranfield, 1991), operational and conceptual (Kim, 1990), adaptive and generative (McGill, Slocum and Lei, 1992), simple and complex (Stacey, 1993), superficial and substantial (Ulrich, von Glinow and Jick, 1993). Hawkins (1994) provides a useful overview of the changing views on learning.

Fiol and Lyles (1985) refer to these different levels as 'lower-level learning' and 'higher level learning'. Lower level learning, refers to learning based upon repetition of past behaviour patterns, usually short term, surface and temporary in nature. This type of learning is very routine and does not involve major organisational adjustments. Higher level learning, on the other hand, involves the development of complex rules and associations about new actions, i.e. learning that effects the entire organisation, involving shifts in central norms, frames of reference and assumptions. The distinction between lower level learning and higher level learning is set out in Table 1 below:

Table 1: Levels of Organisational Learning.

<i>Lower- Level</i>	<i>Higher- Level</i>
Occurs through repetition	Occurs through use of heuristics and insights
Routine	Nonroutine
Control over immediate task, rules and controls	Development of differentiated structures, rules, to deal with lack of control
Well-understood context	Ambiguous context
Occurs at all levels of the organisation	Occurs mostly at upper level
Behavioural outcomes	Insights, heuristics, and collective consciousness
Institutionalises formal rules	New missions and new definitions of direction
Adjustments in management systems	Agenda setting
Problem-solving skills	Problem defining skills Development of new myths, stories, and culture

Source: Fiol C., and Lyles M., 1985, *Organisational Learning*, Academy of Management Review, Vol. 10, No. 4, pp. 803 - 813.

Double-loop learning leads to the development of creativity in the problem solving process, which Argyris and Schon refer to as "deutero-learning", i.e. learning about learning. Deutero- learning occurs when organisations learn how to carry out single-loop and double-loop learning.

"When an organisation engages in deutero-learning, its members ...reflect on and inquire into previous episodes of organisational learning, or failure to learn. They discover what they did that facilitated or inhibited learning, they invent new strategies for learning, they produce these strategies, and they evaluate and generalise what they have produced. The results become encoded in individual images and maps and are reflected in organisational learning practices" (Argyris and Schon, 1980: 136).

So perhaps it is the balance between instrumental and generative learning in an organisation that needs to be studied, and terms developed to describe organisations in terms of the balance between these two categories, or the degree of deuterio-learning that has taken place. Instead of Learning Organisations, perhaps the 'best' learners should be called Generative Organisations.

Organisational vs Individual Learning

An aspect of the literature that has troubled us is the lack of distinction by some writers between individual and organisational learning. What is learned may be similar at both levels. However in considering learning as a process, the problem is manifest in two ways.

One is to assume that if all individuals in an organisation are learning, then it can be called a 'learning organisation'. An organisation that is involved in training even in the broadest sense, is not necessarily a learning organisation however defined. Learning is different from training. According to Benson (1993) traditional workforce training focuses on helping individuals acquire new skills. Kiechel (1990) explains the difference between providing information to people and to encouraging them to puzzle, wonder, question and work things out for themselves. *"Learning includes letting them try out the new and occasionally make the most awful mistakes. In some cases, all that people need may be the chance to sit back and scratch their heads."* (Kiechel, 1990, p. 76). To become more effective at organisational learning, companies will need to understand the difference between training and learning.

There is also a major difference between individual learning and collective learning which involves a transformation of a diverse group of skilled, highly 'learned' individuals into a team of determined people wanting to create the results they seek. For this to become organisational learning requires a set of processes and structures that help people create new knowledge, share their understanding in the collective and continuously improve themselves and their organisation (our underlining) (Soloman, 1994), leaving traces of the learning after the individuals have departed.

Organisations as such, cannot learn in that they do not exist outside the minds of individuals. However structures and processes that guide human patterns of interaction can be put into place. If these are recognized by future employees, it could guarantee that experience and history are routinely included as data for consideration, debate and decision making. For example computer programs can routinely analyse particular data and alert deviations; Bob Galvin of Motorola put quality as the first item on the agenda for his monthly meeting with Divisional executives (Nevis et al. 1995, p. 82); a reward system can be designed to encourage risk taking. Thus 'organisational learning' as a process is a short hand phrase to describe structures and processes that are designed to facilitate the generation and application of new knowledge relevant to managing the relationship between the organisation and its environment.

While organisational learning emerges from individual learning, there are instances of organisational learning, in the sense of producing new adaptive behaviour at the organisational level, when individuals may not be able to articulate it is happening. For example, strategy development over time may appear to participants to be a series of discrete though connected decisions, yet there may be a strong underlying stochastic process. Or a past decision to set parameters at certain levels will determine which incidents are seen as 'deviant' and therefore need to be dealt with, i.e. in which areas new learning will or will not take place.

This raises the question of whether learning truly exists if it cannot be articulated i.e. there is no consciousness of it. When is a behaviour change, learning? Referring back to our definition of

learning, learning is manifest when new behaviour directly arises from new knowledge. Systems thinking would also suggest that new behaviour will in turn provide opportunities for new knowledge.

So a reciprocal relationship is developed. Dodgson (1993) notes a learning organisation is one which *purposefully* constructs structures and strategies so as to enhance and maximise learning (p. 377). But there are still the questions of whether learning actually takes place and what is learned for what purpose.

The question of whether it is the organisation that learns or just the individuals within the organisation, is very complex. Hedberg (1981) suggests that the organisation simply provides the stage on which individuals react and respond to stimuli, (we suggest, viewed systemically, both the stage and the actors must impact on each other, changing both), but also concludes that organisational learning is something more than just the cumulative results of individual members. Here he refers to organisational memory, culture and mythology, which the organisation carries forward over time and which is independent of the individual members. This appears to be a major criterion for distinguishing between the two types i.e. organizational learning is manifest in the guides to action which are left when particular individuals are no longer present.

Dodgson (1993) sees the individual as the primary learning entity. It is individuals that create or discourage organisational forms that enable learning in ways that lead to organisational transformation. This appears to be consistent with Argyris and Schon's 'theory of action perspective' which is an individualistic approach to the learning process.

According to de Geus (1988) and Stata (1989) organisational learning occurs as a result of insights, knowledge and mental models of the company, the market and their competitors, being shared within a community.

From an organisational perspective, Levitt and March (1988) take the view that organisations learn by encoding inferences from history into routines that guide peoples' behaviour - the forms, rules, procedures, conventions, strategies and technologies around which organisations are constructed and through which they operate. The concept also includes the structure of beliefs, frameworks, paradigms, codes, cultures, and knowledge that buttress, elaborate, and contradict the formal routines. (p. 320) These routines are independent of the individual members who execute them and can survive the turnover or movement of individual members. Thus, what is changing when organisations' learn is routines. If this is the case, there is a danger of the organisation remembering the answers but forgetting the questions (Drucker, 1994, p.101).

What is learned may be similar for organisations and individuals. It is basically ways of surviving better in a given environment.

A more sophisticated and higher order level of explanation of the learning content is offered by Duncan and Weiss (1979). They propose that what the organisation learns is new knowledge about 'action - outcome' relationships and the effect of the environment of those relationships' (p75). (This is similar to what Drucker (1994) calls an organisation's theory of business (p96). The knowledge necessary for changes in the local rules governing behaviour must therefore be available to key decision makers i.e. it is public rather than private knowledge. Thus it must be communicable, consensual and integrated (p 87). The whole process is firmly embedded in the social and political fabric of the organisation.

The question of how the transition from individual to organisational learning takes place is at the very heart of understanding how organisations learn. It is an area in great need of research (Kim 1992, Nevis et al., 1995). For those writers starting with a linear, knowledge generation model, research is usually focused on the knowledge acquisition phase of the learning cycle, rather than the sharing phase during which learning moves from being private to public property, or the storage phase when learning becomes embedded in the structure and processes of the organisation. There is also a different approach to research if one considers learning is manifest primarily in strategy at the organisational level (Dodgson 1993), as opposed to decisions throughout the organisation.

Even those who work with a linear model acknowledge it is not necessarily an accurate representation of the learning process. Nevis, DiBella and Gould's study (1995) into four large corporations; Motorola, Mutual Investment, Electricite de France and Fiat, highlighted a three stage model of organisational learning, based upon the acquisition, sharing and utilising of knowledge (see also Garvin, 1993, Huber, 1991). However they believe that learning is not a linear process, and that learning *...may take place in unplanned and informal, often unintended ways. Moreover, knowledge and skill acquisition takes place in the sharing and utilisation stages. It is not something that occurs simply by organising an "acquisition effort."* Nevis et al (1995, p. 75).

While we still continue to use the language of persons to talk about organisational learning, one of the problems to be overcome is to somehow separate the language and metaphors for these two levels of analysis - the individual and the organisation/group. The literature reflects this difficulty. The two need to be seen and languaged as parts of a new whole. A new set of words or metaphors seems to be called for. The use of a computer metaphor goes some way towards reducing the confusion, but it is based on a machine rather than an organic model, so does not adequately account for the stochastic learning process that takes place in both hardware e.g. structure and processes and software e.g. content, at the organisational level.

Besides giving consideration to some of the concepts associated with organisational learning, another approach to arriving at the essence of the concept is to examine some of the more familiar definitions in the literature. This we do in the next section.

DEFINITIONS

Some writers who claim to define organisational learning merely state their views on the mechanics of how it happens, rather than what it is. We have not considered these. Nor have we considered definitions based on individual learning. We have selected some definitions from the literature which provide a variety of approaches to the concept of organisational learning.

Our discussion of the learning process and associated issues suggests a number of dimensions that need to be manifest in a discriminating definition of organisational learning. These dimensions provide a framework for categorising the definitions. The key features of organisational learning from a systemic perspective include - double loop learning; recognition of the environment, distinction between individual and organisational level learnings, link with changed outcomes/behaviour and ongoing creation of cause-effect models of the organisation in the world.

Definitions are now presented and considered against the criteria for organisational learning, discussed above. Table 2 shows each definition considered against each criterion.

Table 2: Definitions Vs Criteria (ordered by frequency)

CRITERIA → AUTHOR ↓	ORG. LEVEL	ENVIR'MT INTERACT	DOUBLE LOOP	FEED'BCK LOOPS	WHAT IS LEARNED	APPLICN OF LNG.
HUBER		✓				
SENGE		✓	✓			
PEDLER &	✓					✓
MILLS &	✓				✓	
WATKINS	✓	✓				○
FIELD &	✓	○	✓			✓
ARGYRIS	✓	✓	✓			
NEVIS	✓	✓			✓	
MARQUARDT &			✓	✓	✓	
GARVIN	✓	✓	✓			○
DRUCKER	✓	✓	✓	○		○
THURBIN		✓	✓	✓		○
DUNCAN &	✓	✓	✓	✓		○
STERMAN		✓	○	✓	✓	✓
M&M	✓	○	✓	✓	✓	○

- ✓ **OVERT**
- **IMPLIED**

These ratings are not presented as being definitive, but are offered as a contribution to increasing the clarity of the concept of organisational learning.

"Organisational learning is a process of detecting and correcting error." (Argyris , 1977, p. 45). This is a cybernetic approach, and demonstrates a single loop perspective unless one defines error in broad terms..

"A learning organisation is a place where people are continually discovering how they create their reality. And how they can change it". (Senge , 1992, p. 12). This definition seems to get to the core of the process from a strong constructivist perspective. There would be a number of people who would disagree with this definition on philosophical grounds. Nor does it refer to where the process leads. One is left with a 'so what?' question.

"The capacity or processes within an organisation to maintain or improve performance based on experience" (Nevis et al. 1995, p. 73). There is an obvious feedback loop here from the past

behaviour to current decision making and it certainly does not preclude double loop learning. However, it does not distinguish between organisational processes in any real way.

"A learning organisation is an organisation skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights." (Garvin, 1993: 80). This definition mentions both the process of learning and the associated competencies, as well as the outcome of that learning. It implies double loop learning.

"A learning organisation is one which improves its knowledge and understanding of itself and its environment over time, by facilitating and making use of the learning of its individual members" (Thurbin, 1994, p. 7) The first part of this definition is rich. It includes the environment as well as a time dimension. The second part talks about how this is done but in an ambiguous way that does not clearly suggest a sharing, integrative process approach.

"The learning company is a organisation that facilitates the learning of all its members and continuously transforms itself" (Pedler, Burgoyne and Boydell, 1991, p.1) 'Members' are broadly defined and include all the stakeholders in the organisation This definition presents two seemingly unconnected statements. There is no apparent link between individual and organisational learning. There is no clarity about the type of learning individuals will engage in.

"We conceive of a learning organisation as one able to sustain consistent internal innovation or 'learning,' with the immediate goals of improving quality, enhancing customer or supplier relationships, or more effectively executing business strategy, and the ultimate objective of sustaining profitability." (Mills and Friesen, 1992, p. 146) While the objectives of the learning are clearly stated, the essence of the learning process is not made explicit.

"A learning organisation is an organisation with a well developed capacity for double-loop learning; where there is ongoing attention to learning how to learn; where key aspects of organisational functioning support learning." (Field and Ford, 1995, p. 24) Clearly double loop learning is at the heart of this approach, and the orientation is at the organisational level.

"Organisational learning is the growth and change of organisational knowledge. The process by which organisation members develop knowledge about action outcome relationships and the effect of the environment on these relationships ". (Duncan and Weiss 1979, p. 75). This definition clearly puts the organisation into an environmental context. It implies double loop learning but does not state what the knowledge is to be used for. It is very clear about the nature of the learning.

Organisational learning is*the processing of information resulting in a change in the range of potential behaviours.* (Huber, 1991, p. 89) This definition links new information with new behaviours, but does little more than state the obvious.

Organisational Learning is*the testing and modification of the firm's theory of business,* (which has three parts - assumptions about the environment; assumptions about the mission of the organisation and assumptions needed about the core competencies needed to accomplish the mission. (Drucker, 1994, p 96, 99 - 100) This is similar to the model of Duncan and Weiss.

"Learning organisations can be seen as a group of empowered employees who generate new knowledge, products and services; network in an innovative community inside and outside the organisation; and work towards a higher purpose of service and enlightenment to the larger world." (Marquardt, and Reynolds, 1994,) This approach suggests what we can look for to

distinguish a learning organisation, but says little about the process by which to arrive there. It adds a clear value dimension that transcends economic considerations

"Learning at the organisational level involves creating systems which put in place long term capacities to capture knowledge, to support knowledge creation, and empower continuous transformation." (Watkins and Golembiewski, 1995, p. 88) This clearly states the process and the internal purpose of learning but makes no link to the external environment.

"Learning is a feedback process in which our decisions alter the real world, we receive information feedback about the world and using the new information, we revise the decisions we make and the mental models that motivate those decisions." (Sterman, 1994.). Sterman's definition can apply equally to individual and organisational learning. It clearly encompasses both double and single loop learning, and suggests the processes by which learning takes place.

As a result of considering these definitions, we can develop a composite definition that satisfies our criteria for a definition that discriminates between organisations in terms of their quality of learning and suggests a basis for a causal model that can be tested.

'Organisational learning' is a process whereby an organisation continually and consciously develops a better understanding of its 'action - outcome' models within different contexts, in order to increase the probability of decisions resulting in desired outcomes'. (Morrison and Marriott).

For this definition, whether the learning gets translated into changes in routines, mental models, physical layout i.e how learning is operationalised, is immaterial, as long as the action changes in some appropriate way.

NEW WAYS OF THINKING

A genuine systemic approach to conceptualising organisational learning requires that we revisit how we think about organisational survival, strategy development and organisational change.

An organisation comes into existence because it provides a benefit to one or more parties and it produces a product or service that is needed by the community but cannot be provided without a significant investment of labour and capital. Thus the survival of an organisation is of importance to a number of stakeholders.

At a higher level of analysis, individual organisations form industries and these make a dynamic and vital contribution to the economies of nations. By examining the learning of an individual organisation, we are also making statements about the processes by which industries and economies learn, survive and prosper in interaction with each other.

Most conceptual approaches to studying organisational survival agree on the importance of the context of the organisation. Ecological models suggest that organisations which better fit their environments will survive at the expense of those which fit poorly. For example Schein (1993) believes that in order to survive and grow, organisations must learn to adapt faster and faster or be weeded out in the economic evolutionary process. Under true globalization there will only be one big market, with no artificial barriers to entry, and only the "fittest" organisations will survive (Hodgetts, Luthans and Lee, 1994). An ecological model places emphasis on a two way flow of interaction between the organisation and its environment over time - the L12 and L21 of Emery's model (1965) - the organisation impacting on the environment as well as the reverse.

A strategic model or best fit approach to organisational management proposes that internal structures and processes be aligned with external features. This gives a greater emphasis to L12 over L21.

To survive in increasingly chaotic environments, organisations can no longer just be adaptive. Luthans, Rubach and Marsnik (1995) see the failure or success of organisations being based upon the ability to learn. They say that: *...there is little doubt that in a global economy...to succeed, and even to survive in the long run, organisations must be able to learn. They can no longer just react to change; they must anticipate change...* (Luthans et al., 25) They cite Sears, IBM and General Motors as examples of companies that have experienced historic decline compared to companies like General Electric, Motorola and Wal-Mart, which have been able to sustain success in the same highly competitive, global environment. Drucker tells a similar tale (1994).

To be genuinely responsive requires moving from passively responding to environmental changes (L21) and increasingly being able to anticipate or design environmental changes (L12) and/or make complementary internal modifications. Organisations need to take control of their own destiny (Pedler et al, 1991, Mills and Friesen, 1992: Rylatt, 1994, Pascale, 1990, Swieringa and Wierdsma, 1992).

The ecological and strategic models are basically adaptive models, about maintaining the status quo. The adaption process can be both defensive or offensive (Hedberg 1981, p. 5) but both are still aimed at equilibrium.

Thus the concept of organisational learning can be considered as another approach to dealing with the question of how an organisation can best survive in a changing environment. The difference between a learning perspective and others is that it focuses squarely on the nature of the process of adaptation which the ecological model does not; and it encompasses the whole organisation non-sequentially rather than the linear model of strategy development, and implementation, which is a slower and less integrated process. Thus it provides a blueprint for a genuinely rapid and integrated response to changes in environment and to changing the environment. Another important feature is that it is self sustaining. The processes are designed for continuous responsiveness, ongoing learning and use of feedback loops to fuel future decisions. It does not lurch from strategic cycle to strategic cycle.

Thus the concept of a truly 'learning organisation' is really an updated, more integrated model of a adaptive, responsive organisation. However within this framework, we believe there needs to be a deep understanding of the prerequisites for an organisation to be *essentially* adaptive (i.e. the internal transformation process is self sustaining and continuous) rather than focusing on the effectiveness of one of a series of organisational adaptations (Boulding, 1978, p111).

If this is the case, there is a need for parallel changes in how an organisation is construed and which factors are considered important for survival and growth. This has direct implications for how managers and researchers think and what they think about.

Zuboff (1988) in her book 'In the Age of the Smart Machine', singles out learning as the driving force of the organisations and believes that it will replace control as the fundamental function of management. Managers will need to learn how to account for and evaluate the knowledge base and intellectual capital of their organisation (Stewart, 1992). The key success factor for the individual enterprise will no longer be a matter of size or the number of assets, but the amount and quality of

knowledge (Harari, 1994). Drucker, (1994) claims that the basic economic resource, the 'means of production', will be knowledge, not labour.

The knowledge that is created by the learning process is the clue to the new ways of thinking alluded to in the opening paragraph. Repeating strategies that have failed is not useful. So just learning better and faster is not sufficient. Organisations also need to be engaged in double loop learning, in challenging the underlying concepts, paradigms, the Weltanschauung that have determined their way of thinking in the past, in examining models of action - a process not found in ecological or strategic models of organisational survival. Thus we are considering a special sort of learning when we talk about organisational learning.

These ideas also have implications for thinking about the organisational change process. The work reviewed here suggests that both the nature of the change needed and suggestions for what needs changing, maybe even how it should be changed, lie in understanding firstly the context, the pattern of interrelationships that surround the organisation and have formed it i.e. its history, and then making explicit the causal hypotheses that underlie strategic thinking. This approach has a greater probability of producing profound change and learning over time in contrast to many change initiatives which seem to start from a different base point on each occasion depending on what the current 'hot spot' or latest management guru, seems to be. Thus it may be possible to use tweezers rather than a sledge hammer to produce desired outcomes.

As evidenced in the research coming out of manufacturing and production management, the number of engineering changes has a disproportionately disruptive effect on production (Hayes and Clark, 1986). Frequent changes of direction based on fundamentally different perspectives of the world, reduce the probability of useful organisation learning occurring. It is like conducting an experiment while changing the hypothesis and underlying conceptual models at irregular intervals.

Thus, as the signpost to organisational learning becomes less ambiguous, in true systemic fashion, it requires that we revisit where we have come from as well as where we are going.

QUESTIONS FOR THE FUTURE

Rigorous research into organizational learning has not been forthcoming in the literature. Huber (1991) has been particularly critical. Specifically he suggests there is little substantial theory. Prior research has not been built on and integrated. There is little cross fertilisation across groups of thinkers in this area. There exist few research-based guidelines for increasing the effectiveness of organisational learning. Part of this state of affairs we suspect is due to the lack of agreement around a definition of the concept.

Additionally there is pressure on organisations to get onto the 'learning organisation' bandwagon, because it is an idea in good currency. Additionally, the work that has been done has not been presented in forums which are monitored by senior organisational executives. This tends to dilute efforts to fully understand the concept and how best to operationalise it.

Among the important questions that we believe need to be addressed by the many travellers on road are:

What actually changes when an organisation learns? The definitions discussed above exemplify the variety of answers to this question.

What is the relationship between quality improvement and learning? Garvin (1993) sees clear philosophical and process links between the two, but the practice seems to be divergent.

With respect to future work both at an academic and practitioner level, there are a number of choices of focus. Where is it best to start work on improvements of organisational learning processes? Does it really matter? Do organisations learn better from success or failure? Is the learning process within a developing organisation different from that of an established organisation (Cangelosi and Dill, 1965)?

Is it more useful to look at organisational learning from only a strategic perspective e.g. De Geus (1988, p. 71) or throughout the organisation?

What is the role of management in organisational learning? Senge (1992) sees the role moving towards that of designers, teachers and stewards. Aubrey and Cohen (1995) suggest the need to replace authoritarian relationships with learning relationships, while Barrett (1995) broadens this idea to suggest managers experiment with the social architecture of their companies to produce cultures that sustain learning (p. 36)

The case study work by Nevis et al. (1995) suggests the need to take a contingency and pluralist approach to studying the effectiveness of organisational learning. How an organisation goes about its learning will vary. Under what conditions do different organisational learning styles work best? While we are attracted to Nevis et al's (1995) suggestion of 'stylistic variations' in learning and focusing on how well an organisation 'works its style', we are concerned about moving into contingency models without first having clearly defined what it is that is being examined.

Nevis et al. also question what form of development is most useful after a start has been made within an organisation. Is it better to enrich what is being done now or focus on introducing learning structures and processes to a different part of the value chain, or change the learning orientation or context in some or all of the organisation?

The approach to organisational learning proposed in this paper also necessitates a different focus for research, away from traditional case studies and survey measures. To observe the learning process actually taking place may be difficult. The work by Hirschman and Lindblom (1962) and Nevis et al (1995, p. 75) suggest organisational learning is more likely to take place in times and places of imbalance and to be non-linear. Finding out where learning is taking place and then getting access to the organisation in a time of discomfort is not something that can be done to a preplanned research timetable.

A greater exploration of the organisation's history, biography (see Aspinwall, 1992; Pedler, 1992) stories (see Rufat-Latre 1994; Kaye, 1995; Roth and Kliener, 1995), the mental models of strategic decision makers and major stakeholders over time and the sociology of the organisation's development all need increased attention, with the recognition that perceptions of history are likely to be influenced by what has happened and maybe reconstructed after the event.

CONCLUSION

This paper presents a critique of the concept of 'the learning organisation' and organisational learning in particular. We hope our contribution will result in a better understanding of the concept with consequent implications for more focused research and improved practice.

The concept, especially if it is defined from a systems perspective as being concerned with double loop learning about the relationship between organisation and environment, offers a radical new way of making sense of organisation dynamics. However a genuine systemic perspective would suggest the goal of full understanding can never be reached. Despite this, we believe it is worth making the effort to pursue this orientation, for the increased richness it will provide.

The learning organisation is a tentative road map, still indistinct and abstract, a target to which the organisation might aim in order to become generative. It is not a destination, but a never ending journey. It is part fantasy, part psychology, and part physical struggle. We like that about it. (Watkins and Golembiewski, 1995, p. 99)

So do we.

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