
Exploring the divide – organizational learning and learning organization

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Abstract

The terminologies organizational learning and learning organization were once used interchangeably. However, in the mid-1990s there was a bifurcation into two streams. Organizational learning became the descriptive stream and dealt mostly with the learning processes in the organization. This stream had its roots in social and cognitive psychology with a strong academic focus. Learning organization became the prescriptive stream with a strong practical focus. A broad theoretical framework is presented that links the two streams. In the implementation of learning organization prescriptions, enormous practical difficulties were encountered, making implementations less than successful. The barriers involved in transfer of learning to all levels in the organization (i.e. individual, collective, organizational, and inter-organizational) and the absence of a link to the learning processes are identified as the major issues in implementation failures. It is postulated that these are the reasons for the gap between the two streams.

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Introduction

Attempts to implement practically the prescriptions set out by the learning organization researchers have encountered difficulties. There is a need to identify and overcome the barriers to the learning transfer process for a successful implementation of the learning organization prescriptions in the workplace. This necessitates a clearer understanding of the learning processes – a domain of organizational learning research. Integration of organizational learning and learning organizations is thus needed.

Researchers once used the terminologies organizational learning (OL) and learning organization (LO) interchangeably (e.g. Crossan and Guatto, 1996; Boje, 1994; Nevis *et al.* (1995) in Örtenblad, 2001). However, the two streams bifurcated in the middle 1990s with definitions offered to differentiate them (Easterby-Smith *et al.*, 1998). We begin with a survey and synthesis of definitions as a base for exploring the divide.

Definitions of OL

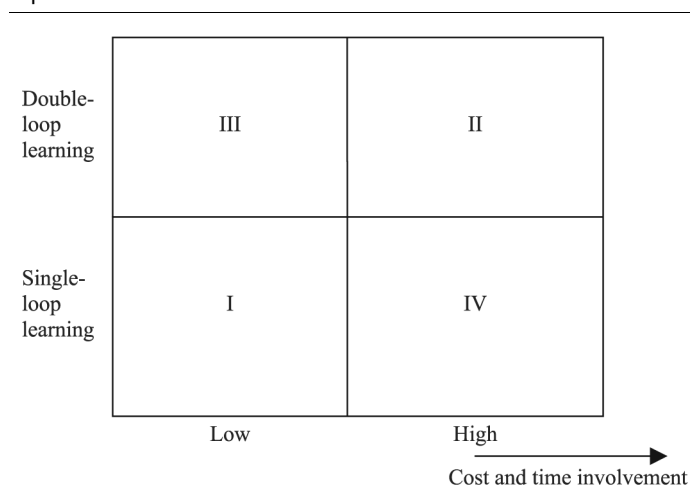
Most definitions deal with the learning processes, and are rooted in social and cognitive psychology (Lipshitz, 2000). They deal with the question, “How does an organization learn?” Consider, for example, the definition-characteristics offered by Hodgkinson (2000, p. 157):

Organizational learning is identified, for the purpose of this paper, as the coming together of individuals to enable them to support and encourage one another’s learning, which will in the longer term be of benefit to the organization.

The learning processes can be broadly defined as single-loop learning and double-loop learning. Single-loop learning is limited to changes to the current norms and assumptions of the organization, whereas double-loop learning questions and changes these norms and assumptions. Senge (1990) refers to the former as adaptive learning and the latter as generative learning. The assumption is that adaptive learning is incremental and does not involve high cost and time. This is reflected as Type I in Figure 1. It is suitable for organizations operating in an environment of slow change (Wijnhoven, 2001). Generative learning is thought to be radical as it makes all knowledge and data within the existing system unusable (Easterby-Smith *et al.*, 1998). This requires the learner to discard obsolete



Figure 1 Combination of learning type with cost and time involvement in implementation



knowledge intentionally, and is referred to as unlearning by Huber (1991). This is necessary for organizations operating in a highly dynamic environment where the rate of knowledge obsolescence is far greater (Wijnhoven, 2001). This usually involves high cost and is reflected as Type II in Figure 1. However, in practice, there would be varying combinations, as shown in Figure 1.

Type I is considered a necessary process in the organization. It is most commonly seen (Levinthal and March (1993) in Easterby-Smith *et al.*, 1998), and is useful for organizational survival, at least in the short term (Kim, 1993; Hawkins (1994) in Örtenblad, 2001). It could therefore be argued that Type I learning occurs without much effort in the organization. This has led some researchers to classify OL as a natural occurring process, needing minimal effort:

OL is as natural as learning in individuals ... (Dodgson, 1993, p. 380).

Type IV is seen in some organizations. Although the costly implementation does not change the operating norms and assumptions, incremental benefits are obtained. This can arise when the new technology is a fad, or raises the profile of the organization, or is demanded by an important stakeholder (like the customer).

Types II and III necessitate double-loop learning. Since this is a necessary feature of the LO, it will be discussed in the next section.

Definitions of LO

The LO is viewed as a process that needs effort (Örtenblad, 2001). It considers the change of behavior of the organization to be a

necessary feature of the LO. Consider the following definition-characteristic offered by Reynolds and Ablett (1998, p. 27):

Thus our working definition of the learning organization is where learning is taking place that changes the behavior of the organization itself.

This working definition finds synergy with the definitions offered by Pedler *et al.* (1991), Garvin (1993), Senge (1990), Stewart (1992) in Hill (1996), Tucker *et al.* (2002), Agashae and Bratton (2001), and Overmeer (1997) in Stewart (2001). The definition assumes an environment of rapid change.

The LO necessitates Types II and III learning (see Figure 1), second order error detection and correction (i.e. the root causes of the problems are eliminated), and even triple-loop learning (this is where the organization's mission, vision, market position and cultures are challenged, dwelling in the "softer" side of the organization (Wiersma (1992) in Altman and Illes, (1998). The organization must institute practices, systems and structures to continue to learn how to learn (referred to as deuterio double-loop learning by Argyris and Schön (1996)).

We have seen Type III learning taking place. Certain double-loop learning does not require high costs and time to implement, but necessitates a shift in thinking. An example of this type of learning was seen in a garment-manufacturing organization, where the responsibility for quality of garments was shifted from quality assurance to production by merely changing the reporting structure.

There are others who view LO as an archetype (Tosey and Smith, 1999; Moilanen, 2001). Tsang (1997) and Garavan (1997) consider LO as an idealistic form. This idealistic form, which is unattainable in practice, can be considered as a special archetype.

A connection exists between the process and archetype views. If one considers the building of the LO as a journey (Burdett (1993) in Gardiner and Whiting, 1997), the organization can reflect several changes in behavior, displaying varying archetypes.

Some have considered metaphors to be a better instrument for describing an LO (Stewart, 2001). This approach attempts to unite the LO stream with the more irrational, emotional and multi-dimensional OL stream. The use of metaphors both illuminates and obscures our understanding (Morgan (1997) in Stewart, 2001). It gives us an insight into a

behavior, but its usefulness in developing and assessing LO is questionable.

Our definitions of OL and LO

The current literature can be categorized into two streams (Robinson, 2001). The descriptive strand would be the study of learning processes, whilst the prescriptive strand would focus on building an organization that learns. The former is referred to as OL and the latter as LO.

OL remains largely the domain of academics (Örtenblad, 2001; Tsang, 1997). This has led to a distinct community with their own infrastructures of conferences, journals, Internet discussion lists and sponsorships (Easterby-Smith *et al.*, 1998).

LO is concerned more with how to change the behavior of the organization and bring it closer to a desired state, and is often the domain of practitioners (Örtenblad, 2001; Tsang, 1997; Critten, 1994; Roderick (1993) in Reynolds and Ablett, 1998; Easterby-Smith *et al.*, 1998). LO models such as those of Drew and Smith (1995), Benoit and Mackenzie (1994), Orlando *et al.* (2000), Lindley and Wheeler (2001), Moilanen (2001), and Claire *et al.* (1996) have strong practical focus and application.

The precise definition characteristics we would use to distinguish the two streams are:

- (1) *OL*: "This is the learning process used in the organization. It deals with the question of how individuals in the organization learn".

The learning process in the organization "may" result in a change in behavior or may be considered potentially useful for the future. Both these are embraced in OL, with the change in cognition a necessary condition (Tsang, 1997).

- (2) *LO*: This is where learning takes place that moves an organization towards a desired state. Thus: "Learning must transfer from individual(s) to collective(s) to organizational to inter-organizational, and vice versa, and 'must' result in changes in behavior". If it does not result in changes in behavior, then genuine transference has not taken place.

The outline of this paper

We first discuss some pioneering work done by Argyris and Schön in the OL stream, and Senge (1990) and Huber (1991) in the LO

stream. Some limitations of the models are noticed that deal primarily with practical difficulties encountered in implementations, and would be used as a basis for understanding barriers to the learning transfer process. We then discuss the reasons for the bifurcation of the two streams. Although OL and LO models now each have elements of the other's early work, this does not imply that convergence of the two streams has occurred. The learning of individuals in the organization must transfer to other levels of learning (i.e. collective, organizational, and inter-organizational). OL must therefore reach a stage where the transfer of learning occurs with minimal barriers. The current divergence will be seen to have much to do with the lack of attention paid to the barriers in learning transfer and the absence of a clear link between barriers and the learning processes. We therefore postulate that the study of barriers holds the key to further stream convergence.

Based on the above gaps, a broad theoretical framework for convergence is then discussed. We then examine two approaches that have made some headway in closing the gap between the two streams. The approaches are "tools for a learning organization" by Pearn *et al.* (1995) and "dance of change" by Senge *et al.* (1999).

Argyris and Schön

The pioneering work of Argyris and Schön (1978, 1996) is commonly quoted in most OL literature (Lipshitz, 2000). Their work has influenced many OL theorists (Lipshitz, 2000). The work of Argyris and Schön falls primarily under the social psychology theme with their work on models I and II theory-in-use. Their contribution to management science is seen in their description of error corrections, and single-loop and double-loop learning. Owing to the emphasis on learning processes, we place their work in the OL stream.

The work of Argyris and Schön deals primarily with learning processes of individuals. Individuals would have their espoused theories (Argyris, 1995). This could be compared with mental models described by Senge (1990). The espoused theories of individuals can often conflict with the theory-in-use. The reaction of some individuals

would be to behave according to what is most comfortable to all, and prevent any negative feelings and instability. The deeply held assumptions and beliefs then do not surface. This is described as model I theory-in-use, and would spur on most single-loop learning, with error correction remaining at first order.

Model II theory-in-use results in surfacing the beliefs and assumptions, and the defense routines are tackled headlong (Argyris, 1995). Argyris achieves this through action workshops, especially using the two-column instrument. In this instrument, the individuals are requested to write in the right-hand column what they would say and what they would believe the other person would say in response. For this conversation, the feelings or ideas that would not be communicated would be noted in the left-hand column. By this technique, the operation of the espoused theories and theory-in-use would be made explicit. This type of interaction could create double-loop learning, and second-order error correction.

However, the approach of Argyris and Schön has some deficiencies. We note three major issues:

- (1) Argyris and Schön describe the application of models I and II theory-in-use from individuals to the organizational level. At the organizational level, the routines, procedures, and policies of the organization as defense mechanisms against double-loop change are clearly understood. However, how individuals engage these defense mechanisms and change them is not made clear. In other words, the translation of double-loop learning from the individual level to the organizational level is not clear.
- (2) It is possible to conceive of situations which have varying combinations of espoused theories and theories-in-use. For example:
 - Individuals having their espoused theory and theory-in-use in sync. This means the individuals have their theory-in-use tacit. Argyris (1997) describes this as skilled incompetence. This situation encourages single-loop learning. How to spur on double-loop learning in such situations is not addressed.
 - Individuals having only espoused theories but no theory-in-use. This could happen when individuals are

brought in from diverse and non-related areas to look at situations alien to the individuals and the organization. Here again, Argyris and Schön do not address such situations, particularly how theories-in-use would be developed.

- (3) The learning process is well described by Argyris and Schön. However, the triggers that spur the learning process are not addressed.

Senge's five disciplines

The work by Senge (1990) popularized the concept of LOs. Senge's five disciplines made some headway in bridging some of the deficiencies noted in Argyris and Schön's approach. The five disciplines elaborated by Senge (1990) are: personal mastery, mental models, shared vision, team learning, and systems thinking.

Mental models and team learning, especially the emphasis on informal and social networks, help in the transition from model I to model II theory-in-use. It is through the foundation of social relationships that dialogue takes place involving a process of reflection and inquiry, and deeply held assumptions can surface. Through this the mental models can be re-framed, paving the way for the transition from model I to model II theory-in-use. Senge (1990) refers to this transition as generative learning. When transition does not occur, learning may result, but the beliefs and assumptions of the organization remain unchanged. Senge (1990) refers to this as adaptive learning.

Personal mastery, shared vision, and systems thinking could be viewed as resources necessary for productive learning in the organization. Personal mastery is the individual's ability to develop continuously his or her own capacity to learn. This is a catalyst in the continuous attempt to re-frame mental models. Shared vision is treated as an organization resource, where individuals in the organization share an image of the future they wish to create. The primary purpose is to build a sense of commitment and common direction. Systems thinking is considered as the discipline that binds all the other disciplines together. It is the understanding of how a learning change can affect the intricate inter-relationships of the system as a whole.

This is a key resource in understanding the possible resistance to a learning change.

The usual implementation strategy suggested by Senge (1990) involves the use of workshops to surface the areas of change, and to use focus groups in organizations to bring about the change. During the process of implementation, more substantial work in developing a shared vision and working with mental models is done. This approach to implementation has resulted in practical difficulties, which are the major limitations of this five-discipline model. Some of the issues noted are:

- The five-discipline model implicitly brings in three levels of learning: the individual level (mental models and personal mastery), the group level (team working), and organizational level (shared vision and systems thinking). Lam (2001) views these levels as logical stages for an organization to evolve as an LO. However, Senge (1990) implicitly ignores the barriers inhibiting the transfer of learning between levels. The existence of barriers to learning transfer in practical implementation has been the major drawback of the five-discipline model. An interesting practical application of Senge's five disciplines in a Swiss tool manufacturer highlighted the barriers to learning change (Steiner, 1998). The practical study showed difficulties in implementing the model and highlighted barriers in each of the five disciplines.
- Insufficient attention is paid to knowledge management systems and structures of the organization and their implication as a resource to learning. The systems and structures must also provide space for reflection and enquiry.
- Like Argyris and Schön, Senge's five disciplines do not properly address the question "What makes individuals learn in the first place?"

Huber's four constructs

Huber's (1991) four constructs of information acquisition, information distribution, information interpretation, and organizational memory focus quite strongly on the information systems of the organization. They address one of the weak areas of Senge (1990), especially that of

knowledge management. The strength of Senge (1990), i.e. the "soft structures" of the organization, is interestingly the weakness of Huber's four constructs in building an LO.

The information acquisition structure is probably the most developed of the four constructs (Crossan and Hurland, 1996). It contains five sub-constructs of congenital learning (i.e. knowledge residing at the birth of the organization), experiential learning (i.e. learning from experiences within the organizations), vicarious learning (i.e. learning from experiences of other organizations), grafting (bringing in learning by acquiring other organizations), and searching and noticing (i.e. scanning the environment, both internal and external). The emphasis put on the external environment is an important contribution, especially in the current context of rapid change. Empirical studies by Schultz (2001) established a clear correlation between external information and competitive advantage. Ancona and Caldwell (1992), in Akgun *et al.* (2002), empirically established that actively observing external environment increases team performance and learning.

Information distribution structure is the necessity to share information across the organization. The necessity to communicate is considered to be a significant factor in the success of LOs (Gardiner and Whiting, 1997). The underlying value that is needed to foster open access to information is trust between management and employees (Gardiner and Whiting, 1997).

The information needs to be interpreted. There are four sub-constructs for information interpretation, with some links to Senge's five disciplines and to Argyris and Schön. The sub-construct of cognitive maps and framing has links to the mental model and personal mastery. The sub-construct of unlearning has some links to Argyris and Schön's models I and II theories-in-use.

Organizational memory deals with the need to store learning so that it can be retrieved by a variety of individuals.

Apart from the obvious weakness of inadequate emphasis on "soft structures", Huber's four constructs suffer from the following weaknesses:

- The emphasis on information systems lends Huber's four constructs to explicit knowledge management. Explicit knowledge is externally available and can

be coded into systems, structures, and routines in the organization. However, tacit knowledge creation and management, which are considered more strategic (Nonaka and Takeuchi, 1995; Rivkin, 2001), are not sufficiently considered. Nonaka and Takeuchi (1995) level similar criticism against Senge (1990). Tacit knowledge lies in the bodies and minds of individuals. It often can be felt but is extremely difficult to replicate.

- Huber's four constructs can be broken down into three levels of learning. Knowledge acquisition could be considered as the individual level, information distribution and interpretation can be considered as the collective level, and organizational memory can be considered as the organizational level. The practical application of Huber (1991) in building an LO would face difficulties as the barriers in learning transfer have not been sufficiently considered. Some consideration has been given to factors affecting explicit information distribution (i.e. workload, power status, information relevance, frequency of interactions, expected results, and distribution costs). This, however, is insufficient when one considers learning transfer across all learning levels in the organization.
- The question "What makes individuals learn in the first place?" is not addressed.

Huber's focus on information management places his model in the field of LO. It is considered normative in nature, conceiving organizations as interpretive systems (Hong, 1999).

We have surveyed, in brief, some of the seminal and popular work on OL and LO. The next section describes the divergence of the two streams. Previous attempts have been made to converge the two streams by mixing elements of the early works described above. This has added further to the confusion between the two streams.

Divergence of the two streams

The OL stream falls under the descriptive strand. The descriptive strand is said to be deficient in two aspects. One would be the

lack of attention paid to certain areas of the learning process (e.g. link between individual and organizational learning), whilst the other is undue reliance on Western organizations to generate theories in OL (Tsang, 1997).

LO falls under the prescriptive strand of research. Tsang (1997) refers to the lack of rigorous research as a major drawback of LO. Tsang (1997, p. 5) states:

Like other "how to" publications, books on the learning organization are often based on the authors' consulting experience rather than systematic and rigorous research.

Tsang (1997) suggested a way to bridge the gap by formulating prescriptions based on the descriptive studies. There have been attempts to do so, with LO researchers borrowing from work done by OL theorists (Easterby-Smith *et al.*, 1998). But the mere presence of OL theories in the prescriptive strand does not mean the convergence of the two streams.

The descriptive strand of research prior to the 1990s would have elements of Argyris and Schön's work. Lipshitz (2000) shows references to Argyris and Schön in the early works of Hedberg, Fiol and Lyles, and Levitt and March. The research done after the 1990s would also contain elements of Huber's four constructs and Senge's five disciplines. To establish this, some of the commonly cited authors on OL from 1990 to 2001 were derived from the Social Science Citation Index (SSCI) database. The work of Nonaka (1994) was chosen because of his exhaustive treatment of tacit and explicit knowledge creation. The relatively unknown "4i learning cube" model by Crossan *et al.* (1994) was chosen from a working paper series for review. The "4i learning cube" considered three levels of learning (individualal, collective, and organizational). The attempt to analyze the learning processes at the individual and collective level, and to consider the transfer of this learning to organizational systems and structures was an important contribution. Both contributions could be categorized in the OL stream. The influence of the early works in Nonaka (1994) and Crossan *et al.* (1994) is shown in Table I.

Similarly, the prescriptive strand of research would also contain elements of the early works. The models chosen for review are Garvin (1993), Watkins and Marsick (1996), DiBella and Nevis (1998), and Drew and Smith (1995). The models were chosen on two bases: One was the common citation in

Table I Organizational learning researchers

Researchers	Their research theme	Link to Argyris and Schön	Link to Senge's five disciplines	Link to Huber's four constructs
Crossan et al. (1994) ("4i learning cube")	Three levels of learning are considered: (I)ntuiting at the individual level, (I)nterpreting and (I)ntegrating at the group level, and (I)ntitutionalizing at the organizational level. Intuiting involves the perception of patterns and possibilities. Interpreting operates at the conscious level of the individual and involves the conceptual map. The challenge of the conceptual map is done through a process of dialogue and inquiry. Integrating involves the change in collective beliefs. Institutionalizing is the transfer of new explicit knowledge into the routines, rules and procedures of the organization.	The operation of model II theory-in-use is seen in the area of (I)nterpreting. This is where individuals, through dialogue, would surface their deeply held assumptions and beliefs and reframe their conceptual maps.	The conceptual map described under (I)nterpreting is the mental model of Senge (1990). However, the continuous challenging of one's beliefs and assumptions would also depend on the personal mastery of individuals. The process of (I)ntegrating the learning in the group occurs through the discipline of shared vision, and team working and collaboration.	The four constructs operate with all of the 4is. (I)ntuiting requires acquisition of information. (I)nterpreting is seen in the information interpretation construct. (I)ntegrating requires information dissemination. (I)ntitutionalizing is the organizational memory construct.
Nonaka (1994) ("A dynamic theory of organizational knowledge creation")	Knowledge creation centres on individuals acting as a collective (described as a social process). Two dimensions of knowledge creation are described: the epistemological and ontological. The interaction of tacit and explicit knowledge (epistemological dimension) results in four modes of knowledge conversion, i.e. tacit to tacit (Socialization), tacit to explicit (Externalization), explicit to tacit (Internalization), and explicit to explicit (Combination). The four modes can spiral from individual to organizational and inter-organizational. The knowledge creation process is mapped to five interlinked phases: (1) Enlarging individuals' tacit knowledge through a variety of experiences as well as a personal commitment to learn. (2) Sharing tacit knowledge and conceptualizing through a social process of externalization. (3) Crystallization. The new knowledge must be crystallized through a process of internalization. It must result in some concrete product or new system. (4) Justification and quality of knowledge created. This involves judging the usefulness of the knowledge created. (5) Networking knowledge ("middle-up-down" process). This involves the use of middle-level managers to interpret the grand vision of the top to the realities on the shopfloor. The above process is supported by enabling conditions described as commitment by individuals, redundancy, and requisite variety.	As stated by Nonaka (1994), the operation of double-loop learning is operationalized into everyday activities (this is possible when one considers the work culture of the Japanese). The process of externalization requires the surfacing of one's deeply held assumptions and beliefs (Nonaka uses metaphors to bring this out) and is the model II theory-in-use in day-to-day action. The process of error detection and correction by Argyris and Schön (e.g. single-order and second-order error-detection and correction) could be considered as the information-processing view of learning. This to some extent is seen in the combination mode described by Nonaka (1994).	The emphasis for individuals to expand their tacit knowledge and their commitment to learning is related to the discipline of personal mastery. Tacit knowledge is made up of two components. One is the cognitive or mental model and the other the technical. Nonaka places emphasis on teams and their social interactions in externalization and internalization. This is linked to the discipline of teamwork. An important phase in the knowledge-creating process is the justification of the knowledge created. This requires that new knowledge must be viable and contribute to the vision of the organization. This is the discipline of shared vision. The networking of knowledge requires the middle-level manager to play the critical role of "middle-up-down" knowledge and information transfer. This requires the discipline of systems thinking.	Some of Huber's sub-constructs are seen in Nonaka's theory of knowledge creation: contact with the external world in order to create fluctuations has some links to the information acquisition; and the operation of the mental model and the need to unlearn old practices are seen in the knowledge conversion processes. These are sub-constructs of Huber's interpretation structure. The externalization and combination require knowledge to be made explicit. The process of crystallization requires the new knowledge to be seen in either new products or re-constructed systems and procedures. This is seen in Huber's organizational memory construct.

the SSCI (i.e. Garvin, 1993), and the other was the extent of practical implementations of the models (i.e. Watkins and Marsick, 1996; DiBella and Nevis, 1998; Drew and Smith, 1995). This is reflected in Table II.

The mere presence of elements of the early works does not mean that the streams have converged. Our experience as practitioners, in attempting to build an LO, has thrown light on the gap that exists between the two streams. LO models come up with much rhetoric and they often describe the constructs that make up the model. However, in practical implementations one often comes across barriers that prevent the achievements of ideals set out by the LO theorists. The reasons for this are:

- limited understanding of the barriers in learning transfer between the learning levels in the organization (individuals, collective, organizational, and inter-organizational);
- limited practical understanding of the triggers that spur the need to survive and learn; and
- limited understanding of how the constructs or processes that form the LO model impact the learning processes.

The above signals are symptoms of the major gap that exists between the two streams.

The theoretical framework that links the two streams

The growing divide necessitates a theoretical framework to be built that links the two streams, by considering the tensions that exist between the learning levels in the organization. This would be the subject of further research. However, the broad basis of this theoretical framework would involve the following:

- a sound understanding of the barriers that exist in the learning transfer between the levels in the organization. The barriers can be described as (–) learning tensions;
- how these (–) learning tensions impact the emotions of individuals in the organizations;
- what disabling factors would minimize these (–) learning tensions;
- an understanding of the (+) survival tensions. These (+) survival tensions spur an individual to learn. There are triggers

that initiate learning. These triggers are information (internal and external) that contains surprise value; and

- how these tensions impact the learning processes.

Figure 2 shows how the theoretical framework can link the two streams.

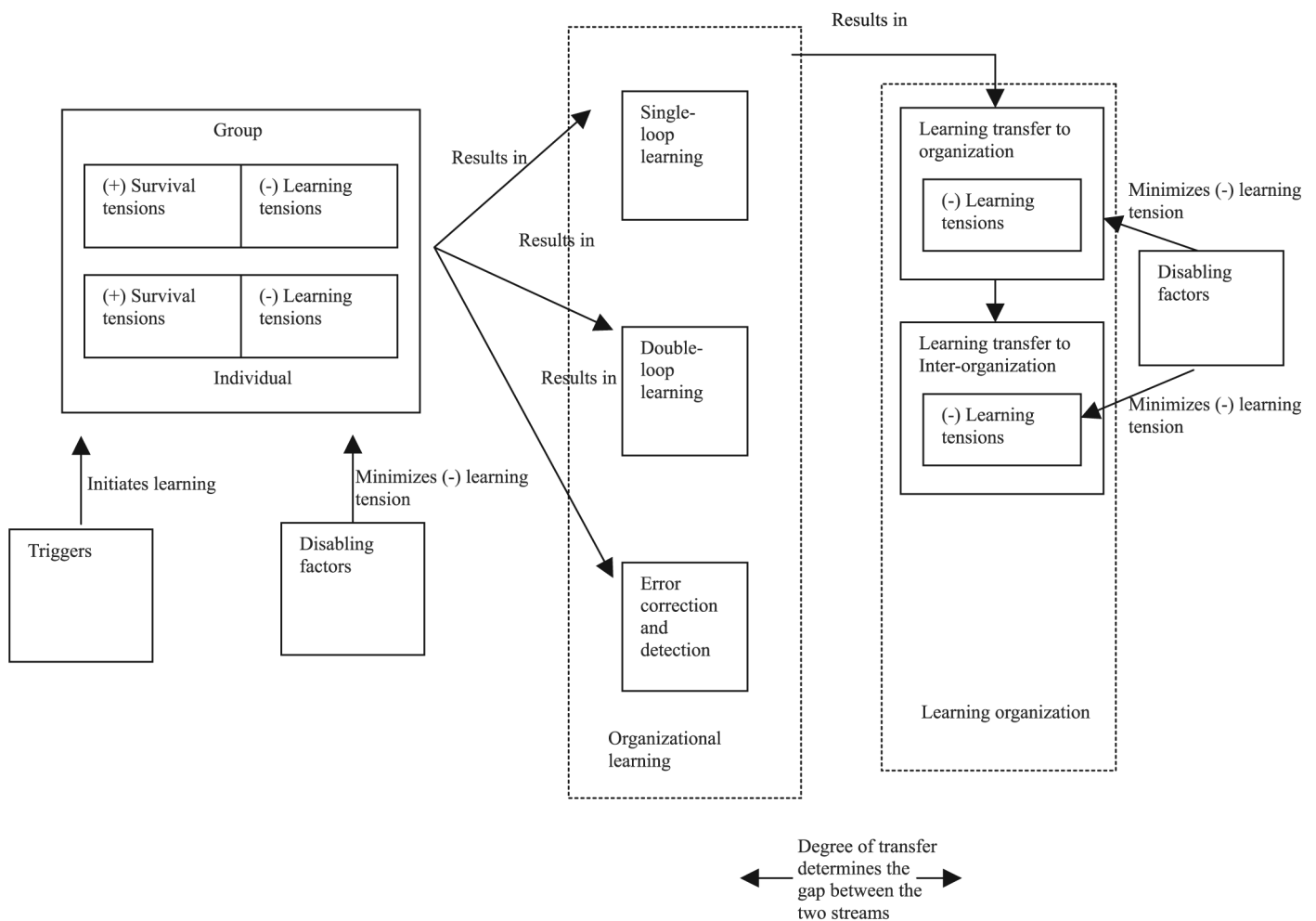
The above framework suggests that individuals as a collective are the primary learning agents in the organization. The learning by this agent depends on the level of tensions (described as (–) learning tensions and (+) survival tensions) and results in single-loop, double-loop, or error detection and correction. The learning (in this case it is explicated knowledge) must be transferred to the organization and even inter-organization (if applicable). This transfer of learning occurs with (–) learning tensions (see the extreme right box in Figure 2), and there exist disabling factors that minimize the (–) learning tensions.

It is appropriate to introduce the pioneering work of Schein. His posting to the Korean War, where he analyzed the impact of anxiety on US prisoners of war, was a primary influence on his research. The anxieties of individuals would help to answer the question “What makes an individual learn?” Schein, in Coutu (2002), describes two types of anxieties (the words “anxiety” and “tension” are used interchangeably): learning and survival. Learning anxiety is described as being afraid of trying something new. It is the fear that this might be difficult to change, cast the person as a deviant from the group to which they belong, or make the person look stupid, or even threaten self-esteem (Schein in Coutu (2002)). Schein refers to this as “anxiety 1”. “Anxiety 1” is “feelings associated with an inability or unwillingness to learn something new because it appears to be difficult or disruptive” (Schein, 1993, p. 86). However, anxiety 1 does not describe all the (–) learning tensions. It considers only the anxieties brought about by conditioned learning in the organization. There are other aspects such as workload, liking or feeling comfortable with one another (based on social relationships), skills in communication and persuasion etc. that cannot be explained by “anxiety 1”. Thus the weakness of the “anxiety 1” definition is the lack of emphasis on learning levels and learning transfer.

Table II Learning organization researchers

Researchers	Their research theme	Link to Argyris and Schön	Link to Senge's five disciplines	Link to Huber's four constructs
Garvin (1993) ("Building a learning organization")	The primary emphasis is that learning must result in change in behaviour. The five building-blocks described are: systematic problem solving, experimentation with new approaches; learning from own experience and past history; learning from experiences and best practices from others; transferring knowledge quickly through the organization.	Systematic problem solving helps to resolve the underlying causes – similar to second-order error detection and correction. Experimenting with new approaches contains ongoing programmes (single-loop learning), and demonstration projects (double-loop learning).	Not following systematic problem solving would result in the "shifting the burden" archetype. Senge refers to the ongoing programme as adaptive learning, and demonstration projects as generative learning.	The four constructs consider most aspects of the following building-blocks: learning from own experience and past history; learning from experiences and best practices from others; and transferring knowledge quickly through the organization.
Watkins and Marsick (1996) ("Dimensions of learning organization")	The seven dimensions of the learning organization are: creates continuous learning opportunities; dialogue and enquiry; collaboration and team learning; evolving a collective vision; systems to capture learning; connects the organization to its environment; and strategic leadership for learning.	The connection to Argyris and Schön is implicitly seen in dialogue and enquiry where deeply held assumptions and beliefs are surfaced. This promotes model II theory-in-use.	The discipline of teamwork and shared vision is seen in two of the seven dimensions of Watkins and Marsick.	Establishing system to capture and share learning, and connecting the organization to its external environment, is captured by Huber's four constructs.
DiBella and Nevis (1998) ("How organizations learn") (Note: The learning orientation and facilitating factors by DiBella and Nevis (1998) are the same as those published by Appelbaum and Reichart (1998))	The three characteristics of the learning organization are: (1) learning orientation; (2) facilitating factors; and (3) learning process. The six learning orientations described are: (1) preference for developing knowledge internally versus acquiring external knowledge; (2) product versus process focus; (3) documentation mode – personal versus public; (4) dissemination mode – formal versus informal; (5) learning focus – incremental versus transformational; and (6) skill development – individual versus group. Facilitating factors are enablers that make learning easier to occur in the organization. The eight facilitating factors are: (1) scanning imperative and performance gap; (2) concern for measurement; (3) experimental mindset; (4) climate of openness; (5) continuous education; (6) involved leadership; (7) articulation of the vision and living it by the leaders; and (8) systems perspective.	The researchers go in depth to describe the defence routines of the organization and how they affect individual- and group-level learning interactions. This has had an influence on their facilitating factor of "experimental mindset". They use similar rhetoric to that used by Garvin (1993). They consider the experimental mindset to take two forms: (1) ongoing programmes. This is similar to the single-loop learning of Argyris or adaptive learning by Senge (1990); and (2) demonstration projects. This is similar to double-loop learning by Argyris or generative learning by Senge (1990).	Four of the five disciplines of Senge (1990) are clearly seen in the facilitating factors: (1) experimental mindset. This requires re-framing of mental models; (2) continuous education. This has strong links with the discipline of personal mastery; (3) involved leadership. There is a strong emphasis on articulating and implementing a shared vision; and (4) discipline of systems thinking. Teamwork is seen in the learning orientation of the organization. The learning organization would have a high focus on team and group skill development as opposed to individual skill development.	Three of Huber's four constructs are clearly seen. Two of the constructs, i.e. information acquisition and information dissemination, are seen in the learning orientation, whilst the construct of information interpretation is seen as a facilitating factor. Knowledge source and the dissemination mode are clearly linked to Huber's information acquisition and information dissemination constructs respectively. Concern for measurement (a facilitating factor) has a strong link to Huber's information interpretation construct.
Drew and Smith (1995) ("The learning organization: 'change proofing' and strategy")	The focus is to develop flexibility for change. The learning organization would thus consist of three elements: (1) focus – means a clear sense of shared vision; (2) will – the desire to stretch oneself, and the ability to work towards challenging targets; (3) capability – this involves the unique ability to leverage the core competencies of the organization.	The element of "will" requires individuals in the organization to overcome potentially upsetting or embarrassing situations. The operation of model II theory-in-use becomes integral in the element of "will".	"Focus" has a link to the discipline of shared vision. There is a need to ensure that everyone in the organization (not only top management) has a shared mental model. "Will" has a clear link to the discipline of personal mastery. "Capability" requires integration of its various functions. This requires the disciplines of team working and systems thinking.	The core competencies of organization that are institutionalized require organizational memory. Huber (1991) describes this as one of his constructs.

Figure 2 The broad theoretical framework linking the two streams



Survival anxiety (or (+) survival tension) is defined as the horrible realization that one “might not make it” if changes do not take place. The individual then becomes open to the possibility of learning (Schein in Coutu (2002). Schein (1993) describes this as “anxiety 2”. We contend that “anxiety 2” deals primarily with physical survival in the organization. Examples of such (+) survival tensions are:

- our competitor(s) is/are getting ahead of us;
- unless we learn and change, our jobs are at stake;
- unless we improve our processes/technology, we will continue to be stressed with heavy workload due to inefficient systems/technology;
- unless we improve, we will continue to face criticism by our customers and stakeholders; and
- our career rise depends on our contribution towards learning.

The other survival anxiety is psychological survival. This is dependent on the personal mastery of individuals. The greater the need for cognitive enhancement, the greater would be the influence of this (+) survival tension. Some examples of these (+) survival tensions are:

- this is something new. It will enhance my knowledge base;
- it will add value to me as an employee or in the field of specialization (by widening my experience, learning, and enhancing my reputation); and
- this is something interesting. It will give me personal satisfaction to explore this.

Schein contends that learning is initiated only if survival anxiety exceeds learning anxiety. Therefore, at the individual and group level (see Figure 2), the interaction of the (+) survival tensions and the (-) learning tensions would result in the cyclical process of “reflection” and “action” (Edmondson,

2002). The learning interactions of individuals in a group (or team) can be considered as an important learning unit in the organization. Cook and Yanow (1993), in Easterby-Smith *et al.* (1998), consider it to be a primary unit of analysis. Senge *et al.* (1999) considers the team to be the primary agent for implementing profound change. A team with positive social interaction, and a psychologically safe environment provided by management, would be the learning forum in the organization (Kleinman *et al.*, 2002). The learning must be explicated and transferred to the organization (and inter-organization if necessary) for learning to be deemed useful. This would result in changes in behavior of the organization, thus satisfying the practical definition of LO stated earlier. However, the existence of tacit knowledge (Nonaka, 1994) must also be considered and is an important component of the learning organization. Tacit knowledge is deemed important in maintaining the competitive advantage of the organization (Rivkin, 2001), due to the impossibility of it being replicated by competitors.

An interesting practical approach to building an LO by Buckler (1998) is an example that lends support to the theoretical framework in Figure 2. They consider six stages of learning comprising ignorance, awareness, understanding, commitment, enactment, and reflection. To move through these phases an individual would face several barriers. The role of the leaders is to remove these barriers and the necessary leadership actions are described. The shortcomings of this model are the focus on the individual. The other levels of learning (i.e. group, organizational, and inter-organizational) are not sufficiently considered.

The attempts made to minimize the gap

We would now like to consider two pieces of work, which made attempts to lessen the (–) learning tensions generated in a learning transfer, and how they relate to the framework. While not necessarily a primary intention, each piece contributed to narrowing the gap between the two streams. The works are: “tools for a learning organization” by Pearn *et al.* (1995), and “dance of change” by Senge *et al.* (1999).

Pearn *et al.* (1995)

Pearn *et al.* (1995) specify five components that describe a working approach for building an LO. The five components are

- (1) learning as a prime asset;
- (2) meeting individual needs and organizational objectives;
- (3) utilization of full potential for learning;
- (4) a climate of continuous learning; and
- (5) blockages removed and enhancers put in place.

Learning is considered a prime asset of the organization. To optimize this asset, the four components of meeting individual needs and organizational objectives, utilization of full potential for learning, a climate of continuous learning, and removing blockages and installing enhancers are necessary actions that need to be instituted.

Perhaps the most significant contribution by Pearn *et al.* (1995) is the recognition of blockages or barriers to learning transfer (could be referred to as (–) learning tensions). These barriers are mostly environmentally and organizationally based (whereas the classical defence routines of Argyris and Schön are barriers in an individual interaction). Pearn *et al.* (1995) also recognized the barriers that exist in transferring learning from the individual to the organizational level. They elaborate the inhibitors that resist learning at the individual and the organizational level, and the enhancers that would minimize them (these enhancers could be referred to as disablers). Apart from these, they also specify enabling structures that provide a mechanism for supporting continuous learning. An analogy of a hot air balloon is used to describe the interaction of these factors.

However, the Pearn *et al.* (1995) model does not show the link between the enhancers and inhibitors, and the link to the learning processes is not made clear.

Senge *et al.* (1999)

Perhaps the approach that comes closest to the theoretical framework described in Figure 2 is the “dance of change” by Senge *et al.* (1999). Senge *et al.* (1999) describe ten challenges that limit change. These ten challenges are (–) learning tensions that a pilot group faces in the organization when implementing profound change. The ten challenges described are:

- (1) We do not have time for this stuff.
- (2) We have no help. We do not know what we are doing.
- (3) This stuff is not relevant.
- (4) They (i.e. the management) are not walking the talk.
- (5) Am I safe? Am I adequate? Can I trust others? Can I trust myself?
- (6) This stuff is not working.
- (7) We have no idea what these people (i.e. the pilot group) are doing.
- (8) They (i.e. the management) will not give us power.
- (9) We keep re-inventing the wheel.
- (10) Where are we going? What are we to do?

The (–) learning tensions generated heighten negative emotions of individuals in the pilot group. There are fear and frustration due to loss of credibility, lack of understanding, and criticism by others in the organization (Senge *et al.*, 1999).

For the (–) learning tensions, Senge *et al.* (1999) describe some disablers that would minimize them. They also provide three growth resources (that could be seen as key disablers). The growth resources described are business results that build credibility, personal results, and networking and diffusion. These disablers would lessen the (–) learning tensions by increasing enthusiasm and willingness to learn, increasing learning capability, and increasing credibility.

These (–) learning tensions would have an impact on the learning capabilities of individuals in the organization. Figure 3 represents the “dance of change”.

However, Senge *et al.*'s (1999) model of “dance of change” has the following deficiencies:

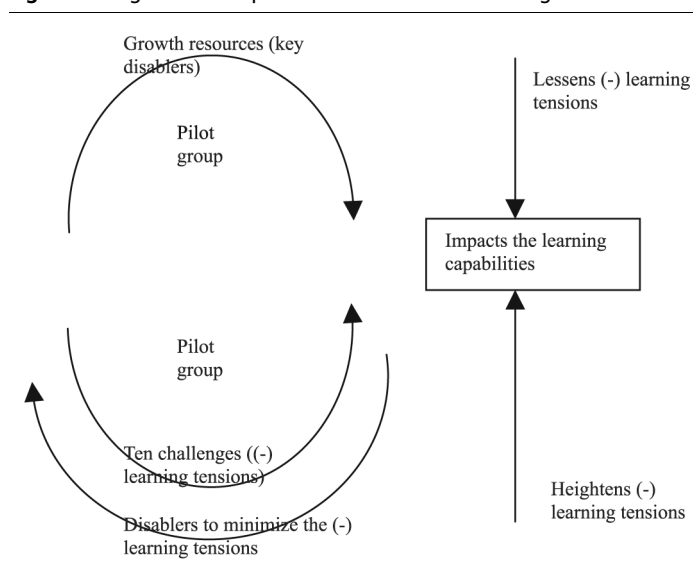
- The emphasis is on transfer of learning between the focus group and the organization. Insufficient attention is paid to the other levels.
- No emphasis on the (+) survival tension, which is a key component in spurring on new learning.
- As in the five-discipline model, the attention paid to systems and structures for knowledge management (to support the learning process) is inadequate.

Conclusions and further work

This paper offers a broad theoretical framework that links the two streams – OL and LO. The current divergence has much to do with the lack of attention paid to the barriers in learning transfer (within OL). This was seen in (OL and) most prescriptive-based LO work, where practical implementations have encountered difficulties. Therefore the need to establish a theoretical framework that links the two streams is clearly established. This would give practitioners a clear perspective of the barriers involved in the learning transfer, and a clearer link to the learning processes. The theoretical framework would highlight the “disablers” that would minimize the (–) learning tensions. It will also provide a link to the learning processes in the organization. This type of information, perhaps collected through an action research process in the organization, is clearly beneficial to the practitioner as it informs them of the consequences of their actions. This should be particularly useful to the leaders in the organization in their attempts to build an LO.

To take these ideas further, we intend to carry out an organizational survey (for a selected industry segment) and elicit the key (–) learning tensions, (+) survival tensions, and the disablers. A theoretical framework will be built with the results of the research. The theoretical framework would be the basis for an assessment tool, which, we believe, can be developed. This tool would provide feedback on the progress of the journey in building an LO.

Figure 3 Diagrammatic representation of “dance of change”



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