

## **Does A Learning Organisation Facilitate Knowledge Acquisition And Transfer?**

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### **Abstract**

Knowledge is seen by many as a key source of competitive advantage and innovation in organisations. It follows from this central role of knowledge, that learning is crucial to creating and disseminating knowledge throughout the organisation. The literature describes the learning organisation as an entity that deliberately and continuously acquires, processes and disseminates knowledge in order to transform itself[2]. Since all functioning organisations do these things to a degree, advocacy of the learning organisation rests upon the assumption that learning processes can be understood and accelerated without causing dysfunctions.

This paper attempts to critically assess the degree to which these learning processes are amenable to manipulation and enhancement. The paper begins by considering the nature of the knowledge gathering and dissemination processes, and argues that it is generally constructivist and self-referential. It is then contended that this limitation will cramp the ability of the learning organisation to recognise new and/or useful knowledge. The contention is that this limitation leads to much of what is heralded as 'knowledge' acquisition, in fact being information gathering, and that whether this information can be translated into useable knowledge is more problematic than often supposed.

The paper concludes that the issues of pre-determination of information gathering by organisations, coupled with the problems of transfer mean that the way learning organisations construct their knowledge is as likely to lead towards ossification as transformation.

### **Introduction**

Knowledge is seen by many as a key source of competitive advantage and innovation in organisations (De Geus, 1997). As early as 1964 Drucker stated 'What does make a business distinct and what is its peculiar resource is its ability to use knowledge to social, economic and managerial advantage' (Drucker, 1964, p.17). This has led to some management writers identifying processes and strategies to better facilitate the acquisition and dissemination of knowledge[3].

Such a management strategy is the learning organisation. This can be characterised as a conscious series of processes that continuously acquire, manage and disseminate knowledge throughout the whole organisation in order to achieve organisational transformation.[4]. Garvin states 'A learning organisation is an organisation skilled at creating, acquiring and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights' (1993, p80). What Garvin outlines is the concept of a process by which firms are able to generate knowledge within organisations that managers can tap into in order to better determine strategy and improve decision-making.

However, learning organisations can only enable competitive advantage via learning if 'knowledge' exists, can be identified as important to the organisation, can be transferred and if the learning organisation does all this better than other organisations.

This paper is based upon work in progress that is seeking to establish whether there is an epistemological foundation for the learning organisation that would enable knowledge to be identified and used in a meaningful way. A combination of questionnaires and semi-structured interviews has been undertaken which sought to gain an understanding of: what employees understood by certain key terms; how they saw the relationships between knowledge and data; how they saw new knowledge being created; and how knowledge was identified and shared. The study includes both companies actively seeking to become learning organisations (and who consider themselves to be one) and those

who are not. The findings will be used in order to explore the idea of whether knowledge can in fact be identified and then transferred within an organisation.

A key element of learning is the acquisition of knowledge. In order to be able to acquire knowledge more effectively learning organisations will need to understand the learning process and then enhance it. In the first section the steps involved in a learning process will be considered as well as how the individuals who are subject to such processes understand them. In the following sections the paper explores aspects of the process in order to establish whether organisations can manage the process to support transformational behaviour.

### **Knowledge in Organisations**

There are two major schools of thought regarding how the process of organisational learning leads to the creation of new knowledge: processual learning which brings forth knowledge via reflection of the real world and constructional learning which brings forth knowledge as it is experienced by those who are involved in the learning process at the time (Easterby-Smith 1997; Easterby-Smith and Araujo, 1999). However, there are several similarities underpinning the theories that enable a simple process model of knowledge acquisition to be outlined. The literature on organisational learning all seems to have a common view of the routines that will lead to knowledge, although they may be framed in different ways: Figure 1.

### **Figure 1 Model of Knowledge Acquisition**

Easterby-Smith identifies six academic approaches to organisational learning, but all have certain points in common: an identification of knowledge from some type of existing knowledge or experiences, an acceptance of the importance of learning and an awareness that what is learnt may not be a linear progression, nor may the knowledge that will be acquired be clearly predicted (Easterby-Smith, 1997). These approaches also accept that the learning is dependent upon an input (information, knowledge etc.) entering into the system in order to produce new knowledge.

Figure 1 implies that the usefulness of the output, or new behaviours, will only be as good as the input and processes being used. Furthermore, as the knowledge is being interpreted it will not necessarily be accurate but may reflect what is already understood and known by those within the organisation. This corresponds with a constructed nature of knowledge which holds that all knowledge is constructed in social contexts and is inseparable from already held understandings (Nicolini and Meznar 1995; Cullen, 1999). Thus, the constructed nature of the knowledge will also affect the usefulness of the output. Therefore, if the knowledge in organisations is found to be constructed, processes will need to be in place to determine the usefulness of the knowledge being acquired.

### **Is Knowledge Being Constructed?**

To test whether such knowledge is constructed members of several organisations were asked to define what they thought 'knowledge' meant, identify how they thought it developed and then to indicate how their organisation identified the knowledge it required for future success. The responses suggest that the knowledge is being constructed within the organisations themselves. The majority of respondents imply that knowledge is constructed via a form of process - learning, acquisition, understanding and gathering were commonly used terms (see Figure 2) - and that these processes were applied to information received from outside the organisation which reflects the model seen in Figure 1 where knowledge is formed from information, data etc. entering into the process. The processes listed not only confirmed the idea of new ideas entering the system but also that interpretation is occurring as the basis of knowledge development.

## Figure 2: Typical process phrases of knowledge definition and creation

“ability to understand”

“gaining”

“acquiring”

“aligning information to achieve knowledge”

“building”

“recalling”

“transferring”

“gaining a better understanding”

“Knowledge implies the ability to actually use information, whereas information is nothing really, just numbers or figures or words or anything else but it doesn’t necessarily imply any sort of a grasp of the concept behind it. ... knowing how to use the information because knowledge implies you know the significance of it, you know., how to apply it, you can actually add value to the information. I think that’s the difference”

“Surely its an external/internal thing? In that knowledge is something that's in here, part of an endeavour - and also in terms of perfection, true knowledge means that knowledge is something that you see as being correct whereas information is something that you may treat with a certain amount of scepticism”

“Knowledge is about absorbing and storing facts”

There are several interesting aspects to these quotes: the idea of process, the idea of information underpinning knowledge, that knowledge also underpins the use of information, the concept of truth as knowledge and the constructivist aspect of how knowledge is being created (Berger and Luckmann, 1996; Nicolini and Mezner, 1995; Wilson, 1996). There is also a clear link with subjectivity as “you know the significance of it” and this too must necessarily affect the knowledge output being acquired and how reliable it can be for decision-making within an organisation.

What will clearly be important is the source of the information, knowledge and experiences triggering the learning systems and there are differing views as to what these triggers will be: Dodgeson (1993), and Huber, (1991) identify an information seeking process which will indicate what is needed to be known and set about achieving it; Weick (1995) and Wenger (1998) state that the community of practice and culture will form a context which acts as the trigger for the individual learning. These approaches are very different but agree that complex routines will lead to the acquisition of new knowledge as a result of the interpretations made of ideas within the organisation. The behaviour of the information seeking system is therefore critical to the successful acquisition and transfer of knowledge as it will determine what is available to be interpreted and whether it has been brought in from outside (as in an open system) or whether it is a restatement of an idea already in place (as in a

closed system). Two aspects of this behaviour are how ideas are selected to become a part of the organisational 'mental model' and the resulting openness of the system to new ideas.

### **Constructivism and Self-referentiality**

Earlier it was identified that organisations are constructing their knowledge. The implication of this is that organisational knowledge will be defined in terms of what is known and may therefore become self-referential in nature (Maturana and Varela, 1980; von Krogh and Roos, 1995). If self-referentiality is accepted it can be seen that the routines impede innovation and new ideas because they are a part of the dominant mind set and will therefore act as an underpinning framework for the creation of anything new. Organizational routines, once established take on a structure and entity of their own and they will perpetuate the status quo (Skule, 1999; Brown and Duguid, 1998; Levitt and March, 1988; McElroy, 1999). Once a structure is in place it will take a major push from somewhere to change it. This underpins Fiol & Lyles (1985) contention that structure determines organisational learning and not vice versa. Examples of how the routines can become constricting can be seen with use of Standard Operating Manuals as well as Communities of Practice where individuals learn from the accepted routines and norms of the community they are working within (Wenger, 1998; Catino, 1999; Yanow, 1999).

Learning organisation writers might argue that there are processes in place to prevent this problem occurring. The need for a feedback loop in the model is implied in many learning models (Argyris and Schon, 1996; Bateson, 1973; Kolb, 1984) and is seen to be integral to the challenging nature of a learning organisation (West, 1994; Swieringa, and Wierdsma, 1992, Goh, 1998) However, as the knowledge that is already in place is seen to have some effect upon what is learnt next, as it is used to identify useful information and suitable learning experiences, instead of enabling deeper learning (as in double or meta-loop learning) the loop may merely ensure the self-referential nature of the system. The question then arises whether, if the system is self-referential, it is still open.

### **Are Organisational Systems Open or Closed?**

An open system is one that permits information to enter and leave the system and can therefore be changed and affected by such information. An example of an open system is where environmental scanning is undertaken and the resultant information is absorbed into the organisational system, processed and then used to make future systems decisions. A closed system is one that does not allow any new information into the system at all. It seems unlikely, therefore, that an organisational system is entirely closed but it is possible that there may be stages between wholly open and wholly closed.

One of the core concepts that underpins learning organisations is systems thinking, (Senge, 1992; Simon, 1991; Vince, 1999). The assumption underlying this theory is that the organisational system is open (to an external environment) to identify and accept what is to be learnt, and that such an identification is potentially useful. According to Easterby-Smith and Araujo, those writers who see organizational learning as a technical process assume that the learning is 'effective processing, interpretation of, and response to, information both inside and outside the organisation' (1998, 3). Although the social perspective focuses far more upon the way individuals make sense of their experiences at work, these experiences would be expected to include specific new information such as that gained by environmental scanning. However, should the system be closed to new inputs of information and ideas the potential for a learning organisation may be severely limited.

According to Senge 'Systems thinking is a discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots'' (1992, 68). Senge identified the use of systems theory as being a way to gain a comprehension of complexity in organisations and decision-making rather than looking at issues in a linear way. However, this acceptance that everything is inter-related shows that if any part of the learning organisation model is

erroneous, then all of the system will be influenced by the error. Therefore the difference between an open system and a closed one will be very important indeed.

To be 'Simultaneously Open and Closed' seems paradoxical but is nonetheless central to the ideas of organisations proposed by some writers (von Krogh and Roos, 1995; Magalhaes, 1998; Morgan, 1986). An example of being simultaneously open and closed in human cognitive terms can be seen as the brain filters more information than it registers. The brain receives signals (and is therefore open) but it must then assign meaning to these signals. This it can only do by relating those signals to generalisations and distinctions previously constructed and to pre-existent norms. If there are no norms already in place the new information will probably be rejected demonstrating system closure. Applied to organisations this means that the information system is open in so far as it receives signals from the environment, but the knowledge constructing system is closed (von Krogh and Vicari, 1993), although environmental scanning occurs what is learnt will not necessarily be what is really occurring. If an organisation is closed to new interpretations then all new learning will be influenced by what is already in place.

The idea that the system is at least partially closed is already accepted by some writers (Weick, 1995; Berger and Luckmann, 1966; Shaffer, 1981), but what is not always realised is that this may constrain the construction of new knowledge to incremental learning rather transformational thinking, or that at the extreme this may effectively close the system to interpretation of the outside world. Referring to Figure 1, it can be seen that partial closure will not lead to the new knowledge anticipated as the processes of seeking information and interpreting it will merely replicate the existing mindset.

Thus an amalgamation of incremental development (based upon a constructed reality) and information filtering may be what is occurring in organisations. This, combined with the fact that knowledge will only be recognised as untruth when something goes wrong indicates that the learning processes within an organisation will, by their very nature, be reactive not proactive. This is an important point for potential learning organisations as the boundaries are seen to be key areas for change and learning organisations are supposed to be transformational which implies a proactive nature.

Once it is accepted that the mind set in place is liable to self-perpetuate and close the system, it can be seen that positive steps will be required to prevent total circularity of knowledge. The theory is that learning organisations are able to overcome these limitations by providing processes and systems that would enable the organisation to be better aware of both itself and its environment.

From the theory discussed above it appears that there are three issues pertaining to acquisition that may affect the success of a learning organisation. Firstly ideas will enter the system but the amount of new knowledge may be reduced as the filters will prevent some being accepted. Secondly, the self-referential nature of the system will mean that the organisation will determine what it thinks it needs to know and therefore predetermine what the employees actually seek to add to the system. Lastly, the routines of the system will have a tendency to self-perpetuate, thereby encouraging its employees to conform to the processes and ideas already in place.

### **Acquiring Knowledge**

In this section the paper will examine whether or not the literature on learning organisations has identified enhancements to the learning model that will improve knowledge acquisition without compromising the goal of transformation.

### **Reducing filters to new knowledge**

The currently held mindset will act as a filter that decides which ideas and areas of information will enter the organisation. It therefore follows that, if everyone has the same filters, only certain types of

knowledge will be able to enter the system. This is relevant owing to two elements that are commonly held to be key to successful development of learning within a learning organisation: Shared Vision and Shared Mental Models [5]. The literature stresses the importance of everyone understanding and sharing the goals and everyone moving towards a common set of understandings. This shared mindset is thought to enable the transfer of knowledge

However, far from encouraging new learning, the constructed nature of the knowledge being created means that a common set of filters would be more rigorously applied, thus reducing the opportunities for new information to enter the system. The current research supports this idea that the current mind set acts as a set of filters as can be seen in Figure 3. These are examples of many statements indicating that the new knowledge is achieved via a reference point already present. If by any chance the reference points are wrong the new knowledge may not realise that fact.

### **Figure 3 : Quotes describing how new knowledge is attained**

“Seek out information in order to make decisions”;

“New knowledge is gained via debrief”;

“Everyone is always very short of time so there is a need to focus on short meetings and stay ahead. We are staying one step ahead via the new innovation centres. Have to be clear on benefit versus cost. Competencies lead to fuller discussion”;

In response to who should be bringing new knowledge: “Yeah, it should be everyone, but then, there has to be some indication from the top that that is what is being looked for though, because otherwise you know, if you think that your job is to just keep doing the help desk, not looking to solve problems as they come up then you’ve no incentive to say ‘right I could do this a new way’”

“working out what the info I have been given will give me the knowledge I need.”

“I gain knowledge I need by working out which meetings and conferences to go to”.

“I work out what I need to know. The Mission is key here as it sets the long term objective and identifies what should and should not be included.”

These quotes show that for various reasons: time, political agendas, data management etc. people do filter out what they receive. There is even a hint that the decision to filter will be part of the mind set already in place. Therefore, before an idea is even received it has a reduced chance of being accepted.. Interestingly the answers were not noticeably different between respondents from both ‘learning’ and ‘non-learning’ organisations.

There is a desire to develop collective vision and effective, empowered teams. To achieve these there is great emphasis placed upon shared vision and collective culture achieved through training and development (Francis and Mazany, 1996; Dobson and Tosh, 1999; Clute, 1999). There is also emphasis that this new culture should have healthy disrespect for the status quo [6]and encourage the promotion of divergence in order to create innovation is widely claimed [7]. However, the promotion of inquiry and dialogue (including the use of double loop learning) does not necessarily help to change the way that the information is being acquired focussing as it does upon problem-solving. There is great emphasis on sharing the knowledge [8], but in a constructed framework where knowledge will only grow in relation to itself, all that may occur is that there will be more of the same learning being

generated. The elements of the model do not offer a great deal of hope that a learning organisation will be able to alter the filtering problems.

#### Self-referentiality

If organisations become self-referential systems, they will determine what they think they need to know and therefore predetermine what the individual actually seeks to add to the information and knowledge flow. This may become increasingly serious if the concept of setting learning targets is encouraged as a way of developing learning. The setting of 'learning targets' is a strategy being advised to those who wish to measure the acquisition of new knowledge, which in turn is seen an indicator of increased learning [9]

From the primary research it was found that setting learning targets was a strategy being used within organisations that considered themselves to be learning organisations. They saw it as promoting learning and knowledge development. They were setting 'learning targets' but the targets stressed the commonality of knowledge rather than individuality (i.e. everyone was seeking to achieve the same qualification level within one company). It became clear that the actual output was that much of the same 'information' was being redistributed thus inhibiting, not encouraging, innovation and growth. The targets were being achieved but the new knowledge merely supported current thinking already within the organisation. According to the training and development managers in the companies considering themselves to be learning organisations the new knowledge does not appear to be changing the overall sum of organisational learning present within the organisation. They agreed that they were learning more but did not feel that it was altering the mind-set being used to frame decision-making.

Part of the problem may be to do with the belief that the process of learning will, in itself both change the organisation and set the organisation on the path to become a learning organisation. Kock et al. feel that the focus on organisational learning produces the myth that all organisations should be learning systems and therefore organisations seek to learn even when they do not need to (1996). One of the mistaken targets may therefore be to have more learning, not to use more knowledge. 'How you categorize and measure something depends on how you look at it and what you are differentiating it from. Since there are so many different ontologies of organizational learning, the more one sets out to measure precisely its nature and extent, the more one is likely to fall into what Ryle (1949) calls a 'category mistake' (Easterby-Smith et al., 1998, 267). For example, when Iles suggests the use of competences in order to learn how to learn (1994) there would appear to be two potential problems. Firstly, who defines the competences and do they know what they are looking for. It is possible that the assumptions being made to set up the competencies are erroneous: i.e. what competencies are required for the organisation may be those actually applicable to a different organisation, one that the writer thinks would be suitable but may not be. Secondly, as they are defined in the same language as other processes such as recruitment, can they be seen to be radical and different, as others imply processes must be if they are to transform the organisation? The competences may merely reflect processes already in place.

Identifying the training needs of individuals and then formulating plans to achieve these initiates employee development. However, if the training needs identification is set against the background of a falsely constructed environment and a self-referential set of goals, the needs chosen will only act to perpetuate the self-constructed reality as perceived by those setting the training goals. The desire to attain a coherent culture often exacerbates this further as employees, whilst encouraged to innovate on the one hand, are encouraged towards a common, self-constructed understanding on the other. This will affect not only the targeted needs and potential areas for knowledge development but also design, as this will reflect perceived needs and a desire to maintain the stable relationships outlined earlier. Honey recognised this and stated that many organisations are unwittingly designed to encourage the acquisition of procedures and behaviours they wish they had less of (in Garavan, 1997, p. 26). This

may be because although they want something else they are unable to design structures outside their boundaries of understanding.

### **Routines of the learning process**

Organisational success is often defined in terms of the relationships between performance outcomes and targets. As targets change so does the definition of success. However, what does not change is who sets the targets. Levitt and March observed that organizations have problems in overcoming the competences they have developed with earlier processes when they wish to define new ones. Once a set of ideas is in place they will be very hard to replace even when an attempt is being made to do so (Levitt & March, 1988). Organisational memory can be very long and often success is assumed to result from managerial actions, which will then be repeated, even if in fact it is a coincidence (Walsh and Ungson, 1991). Once an outcome has been attributed to a reason (accurately or not) it will become fact and the definition is now set within the process. Thus random actions have now become a successful /unsuccessful process which will reframe future decisions and will self-perpetuate. This is directly contrary to the stated needs of learning organisations to have radically new and different structures and processes [10]. It seems, therefore, that far from the learning organisation overcoming the problems of acquiring new knowledge the system may actively preserve the potential problem.

### **Interpreting Knowledge**

In order to benefit from knowledge held within it, an organisation must be able to recognise what knowledge has been acquired and know what it is for. It was established in the previous section that the organisation may not acquire useful knowledge and also that the filtering systems may prevent a recognition that anything new needs to be interpreted. Assuming that some new ideas will, however, enter the system the learning organisation will need to be interpreted in some meaningful way. The problem with self-referentiality clearly applies here. Not only will the choice of what information is allowed into the system self-referential but also the way it is interpreted. There are other potential problems with the interpretation of knowledge, particularly the way that knowledge is actually defined and understood. Concerns about the meaning of knowledge, how it differs from information and what is considered to be true may affect the overall success of knowledge interpretation.

### **What is knowledge**

Much learning organisation literature does not say what the authors understand to be knowledge, although they consistently state that the creation and implementation of knowledge is the purpose of learning organisations. Garvin for example states that an organisation that is a successful learning organisation is one that has, 'become adept at translating new knowledge into new ways of behaving. These companies actively manage the learning process to ensure that it occurs by design rather than by chance' (1993, 81); Gephart et al. state 'The lifeblood of a learning organization is a free open system for communication information and knowledge' (1996,40) and this should be held as a central issue. Yet neither Garvin nor Gephart actually define what they mean by the word 'knowledge'.

Nonaka & Takeuchi (1995) state that the key for organisations to gain greater knowledge is to make tacit knowledge into explicit knowledge and that most knowledge is created by middle managers. This requirement to convert tacit knowledge to explicit knowledge is a view strongly supported by much of current learning theory (Gnyawali, 1999; McAulay et al.,1997). This is argued as being a fundamental organisational process as it is thus that transfer from employee to organisation can be made and so knowledge can be utilised by the organisation.

Nonaka and Takeuchi do ask 'what in fact is knowledge?' and argue that western philosophy has generally agreed that it is 'justified, true belief', and this would then become the shared understanding

and history that pervades the community of practice that we are socialized within. Over time it has become accepted that we know what knowledge is and that we will recognise the veracity of knowledge we see and therefore see no need to test it. This ability to identify truth is supported by the western acceptance that there can be objectivity permitted by a split between the knowing subject and the known object (Nonaka and Takeuchi, 1995). Eastern philosophy does not have this split but sees everything as a continuation of everything else and accepts that by its very nature a system will be subjective and self-referential; what is seen may not be 'truth' only the individuals understanding of the 'truth'.

According to Nonaka and Takeuchi 'the most important characteristic of Japanese thinking can be termed a "oneness of humanity and nature"' (1995, 28) Kofman & Senge move towards this perspective when they stress that the systems approach needs to consider the 'Primacy of the Whole' and move away from linear thought. The interaction of the whole system is what matters and not the individual parts within it - unless the whole is understood no transformation can occur, subjectivity is acceptable and in fact needs to be accepted as inevitable (1993,13). They do, however, concede that the problem may be that the individuals may be unable to conceive of the whole.

There are two key issues here that may affect whether new knowledge is developed or recognised. Firstly, that the employees' ability to actually see the big picture and therefore actually know what information is needed by the organisation in order to develop may be severely limited. The problem of potential system closure has already been discussed earlier. Secondly, if the knowledge is focused upon the individual it reduces the chances of useful knowledge being developed as each person creates their own reality, which may not reflect what the organisation needs. The potential for individuals to recognise 'false' knowledge as a part of their reality may not only prevent transformation, but actively mislead the organisation when it is making decisions.

### **Knowledge or Information?**

Employees may also fail to acquire new knowledge because they have a false understanding of what it is. Argyris and Schon understand the difference between information and knowledge as 'While information is descriptive - that is, it relates to the past and the present - knowledge is eminently predictive, that is, it provides the basis for the prediction of the future with a degree of certainty based upon information' (1996, 3). Kock et al. concur that knowledge, information and data are closely related (1997, 71; 1996, 31), however, they also state that, although they should be distinct, these three abstract concepts are often confused (1997, 71; 1996, 31). As an example they show Drucker (1964) as using the words information and knowledge interchangeably.

There are two issues emerging here. The first is the phrase 'degree of certainty'. This implies that knowledge has been derived from the information and is good enough that it can be used but may not be entirely true. This implies a constructivist and pragmatic approach to knowledge as outlined above. The second point of note is about the confusion of terms. When analysing what was flowing around organisations Kock et. al. found that, although people thought it was knowledge it was predominantly information that was found (1997). They found that information can be exchanged without knowledge but that all knowledge exchanges included information. They concluded that if organisations can improve the knowledge transfer rather than information transfer, learning is more likely to take place. This would presuppose that those within the organisation were aware of the difference and could identify what needed transferring.

This possible confusion of terms is one of the areas the research has been interested in. Respondents were asked to define certain key terms including: Information, Data, Learning and Knowledge. They were asked to explain what they understood by the word and to indicate how they would use it. The range of answers (see Figure 4) indicated little common understanding of the terms, which is significant as most communications on the subject do not include working definitions but assume a common understanding. The most significant confusion was between 'information' and 'knowledge' and this was found consistently, with no noticeable differences between organisations claiming to be learning organisations and those that were not. The definition of 'knowledge' is commonly held to be

'information', whilst 'information' is frequently defined as being 'data'. The logical inference from this is that 'knowledge' equates to 'data' but as this is clearly not the case it emphasises the confusion regarding terminology.

#### **Figure 4: Typical quotes from the short answer question responses**

Definitions of 'knowledge' "information about something"; "information gained from many inputs and used to deliver outputs"; "knowledge is the individual's understanding and information gathered about something"; "retention of information"; "Information"; "To have learned, remembered and be familiar with various pieces of information"; "information that you know"; "may be described as accumulated wisdom, experience or simply the possession of factual information"

Definitions of 'information' "knowledge, data"; "knowledge communicated, gained or given"; "facts in the context of giving knowledge"; "data"; "facts, news, data, provided by verbal, written and electronic mediums"; "data of interest"; "data or facts used to increase your knowledge"; "relevant data or knowledge".

Definitions of 'data' "information"; "information, facts, figures"; "Information necessary to carry out your work"; "information that can be analysed"; "visible or audible information"; "information stored or required to do something, information on any person or item specifications".

What can be seen here is the interchangeability of the terms within a range of firms and that what are held to be commonly understood terms are clearly not so, implying that communicating ideas regarding learning and knowledge are likely to be less successful than expected. In all cases respondents indicated that the drive towards greater 'knowledge' was leading to an increase of 'data' and 'information' within the system, but it was not obvious whether, if their own definitions of knowledge were to be applied, new knowledge could be seen to be achieved or identified. In one of the learning organisations studied the Development Manager agreed that although they were learning more this did not seem to be creating radically new ideas or changing the organisation in any obvious way.

Kim says, 'True knowledge is more than information; it includes the meaning or interpretation of the information, and a lot of intangibles such as the tacit knowledge of experienced people that is not well articulated but often determines the collective organizational competence' (1995, 75). The concept of understanding was brought out by respondents as one of the processes indicated as leading to knowledge (an example is seen in Figure 4). However, this was outlined as an understanding and internalisation of information brought in and therefore is, by its very nature self-reflective and constructed as outlined earlier; this links with the concept of organisation being gained via process identified earlier in the paper. What is seen here is that if the terms are not clear and knowledge is not well defined, learning organisations will be satisfied if they recognise there is more information entering the system (and the use of targets as outlined above encourages this).

#### **What is true**

It will be assumed that something is knowledge or that it will become knowledge and this may cause a third problem in interpreting knowledge. This could mean that if information is considered to be true it

will therefore be accepted as knowledge with no challenge. Further, it could mean that if information is seen which is believed to be knowledge, it will be accepted as truth without further verification. If this is so, then it follows that potentially all learning entering an organisation is being accepted into the system as a form of knowledge and therefore as truth to be acted upon unchallenged - knowledge is implied to be a 'belief' system. When asked to give examples of how the organisation gained 'knowledge' the majority of examples were of 'information' entering the system, with little evidence of any process being applied in order to manage what is amassed, thereby supporting the hypothesis that most 'knowledge' is no more than a belief system and may not be true or reliable.

None of the learning organisation models discuss the need to verify knowledge. Double-loop thinking is cited as a way to ensure the maximum is learnt but is not apparently expected to have to act as a doubting system. It would appear therefore that too much data may need to be interpreted as it is all apparently true. Cognitive dissonance would then act as a filter to ensure the mental models were maintained and self-reflective filtering will occur once more.

### **Transmitting and Transferring Knowledge**

Once knowledge is identified within the individual it then needs to be transferred in some way to the organisation as a whole. The learning organisation idea of transfer is seen to be that via dialogue, experience, the development of organisational routines and the sharing of ideas, aspects of knowledge will be developed so that a group may collectively have knowledge, even if individuals initially only understood a part of that knowledge. The group or organisation therefore becomes greater than the parts. Learning organisation models use the development of mental models and the sharing of organisational vision to facilitate this transfer [11].

The processual learning styles see the sharing of information as key as this will trigger learning (see for example Huber, 1991) but it assumes that the outcome of the sharing of inputs will be the same for everyone. This will work the same way for knowledge transferred between individuals and the transfer of knowledge from the individuals to the organisation. An example is seen currently with Intranets - by keeping everyone informed it is assumed that individuals will all learn the same things and feed this into the organisation. The new 'Knowledge Management' systems may lead to new knowledge but for it to be the same the system must work in a similar way for each individual. As it is easier to track the transfer of things or routines it is probable that those managing the process will concentrate on these rather than deeper developmental ideas.

Any constructivist perspective of learning will also indicate that there will be problems with transfer, as each individual is seen as bringing forth a unique view of the world which cannot be transferred, as it is framed by their perceptions and their experiences and understanding much of which occur outside the organisation (Weick, 1995, Wenger, 1998). It has already been identified that organisations are self-referential in nature. However, from the same logic it should be clear that individuals will also be independent, self-referential systems that will reframe ideas to their theories-in-use. Unless there is very open communication that has clear language and a way of having transparent ideas, some ideas will be more easily transferred than others, but these might well be relatively unimportant or incremental ones. Any breakdown prevents the likelihood of a shared vision, as what needs to be shared for common learning will not only be the information but also the prevailing mental model and culture to enable similar sense-making.

### **Barriers to Transfer**

Some current management thinking, reflecting the cognitive view of organisational learning, states that the effective creation of new knowledge hinges on strong, trusting interactions between members of the organisation. This will enable both the development and transfer of knowledge, particularly of the deeper tacit knowledge (Nonaka and Takeuchi, 1995; von Krogh, 1998). They accept, however,

that constructivism makes knowledge creation a very fragile issue, as one cannot be sure what will be brought forth and that even with an open culture, knowledge transfer may prove to be problematic. Reasons vary but include how individuals understand their organisation, the power relationships present within the organisation (Dovey, 1997), the structures of communities within the organisation (Wenger, 1998), the type of organisation and the culture of the organisation.

Argyris highlights that 'invalid knowledge' occurs in organisations because people express the views and develop the ideas that they believe the organisational culture and/or their peers desire (in Kurtzman, 1998). Many writers agree that organisational politics and power, and the emotions they engender, will affect the learning process (see for example Brown & Duguid, 1998; Vince, 1999; Coopey, 1996; Swidler and Arditi, 1994). This can be seen to be because the inputs will change depending upon what the individuals consider to be the desired output.

For example according to Antonacopoulou, 'Managers ... do not seek to transform themselves through learning. Instead they seek through learning, to maintain their security and to protect their self-image' (1999, 11). Richter concurs with this identifying several barriers to knowledge sharing and transferring. Firstly, translation is seen as a barrier to transfer: by this she means that the task of explaining is seen as too complex and therefore not worth trying to 'translate' the knowledge to others. Secondly, the solitude of management leads to losing the habit of sharing and translating for others, (especially as solitude is seen as key to survival by some). Thirdly, although managers stated they had learnt from interpreting and codifying information given to them they did not see a need to pass this on. They saw experimentation as a form of development to be left as a test for the able (Richter, 1999).

The importance of who is being communicated with is further demonstrated by Andrews and Delahaye (1999) who showed that transfer is strongly affected by the individuals' decisions as to who they wish to transfer with and why. Both inputs and outputs are affected by: the social credibility of those to be shared with; the intellectual credibility of the source to learn from; who would get the glory from the outcome of the knowledge and how trustworthy individuals are. Clearly the likelihood of transfer of all individual learning for the best use of the organisation is seen to be subjected to filters determining what is seen to be the best for the individual. The filtering is particularly strong where credit may need to be shared if knowledge is shared.

### **The Effects of a Learning Organisation**

In theory the transfer of knowledge and learning should be better within a learning organisation than within a non-learning organisation. According to Skule (1999) lack of transfer can be understood as a lack of development in the various rule-following patterns that govern work practices. As learning organisations encourage processes and structures such as double-loop learning and on-going team communication processes they should encourage more knowledge transfer. The organisational routines will imply what is wanted and will automatically determine the output (Berger & Luckmann, 1966; Shaffer, 1981; Skule, 1999).

However, Argyris states that whilst people do not always behave congruently with what they say (espoused theories), they will behave congruently with the theories-in-use (mental models) and therefore will follow the expected routines and patterns as understood from the culture, the stated policies and the communities of practice within which they work (in Kurtzman, 1998). This may lead to a filtering out of new knowledge, as it does not fit the current model thereby preventing transfer. Double-loop learning will not stop this filtering. The knowledge used to try to fix the problem identified may already have been filtered, and the problem itself may not be accurately diagnosed as the mental model may influence what is thought to be the problem.

As was shown earlier the need for a coherency within a knowledge framework will lead to a reflection of the mental model held, which will drive behaviour. If there is to be a change in behaviour, therefore, there must be a change in the mental model being applied. However, an individual via an understood routine, will bring the current mental model forward and then ideas will be reformulated and recreated. Once again the organisation is in a self-referential loop whereby a new mental model is

unlikely to be understood, transferred or adopted. The encouragement by learning organisation models for organisations to share the mental models shows, once again, that far from merely not encouraging the creation and transfer of new knowledge, a learning organisation may in fact actively prevent its successful development.

### **Implications**

At the start of this paper a model of knowledge creation was put forward. However, the processes espoused in the literature frequently obstruct or misdirect these flows. Consequently, these effects may be quite different to the aims, turning them around completely. If as stated the learning organisation may pre-determine the knowledge it desires this will therefore mean that the knowledge acquisition system will start with a process of selection of what information it desires. There will then be a process of ensuring that the individuals will acquire the information chosen for them lastly the transfer into the individual (and eventually organisational) mind-maps will be affected by the context and the construction systems in place. The new model would look like Figure 5.

### **Figure 5 : An alternative model of knowledge creation**

Figure needs to be inserted here!

The implications of what has been discussed are that companies, instead of learning what is really happening, only seek information as they see the need for it and use it to reconfirm what they know. Self-referentiality shows us that organisations may fail to detect errors and that decision-making must be flawed. 'Rather they adapt to an environment they themselves have participated in constructing and to which they have conditioned others' (von Krogh & Vicari, 1993,401). Measurement is against efficiency that is internally defined by management. Therefore targets are being set that will confirm what is already known and the common ethos will ensure that all staff are learning the same ideas. This is an important issue for an organisation seeking to become a learning organisation, as a common theoretical assumption is that individual and group learning will enable new behaviours to emerge and change to occur in a proactive way because new knowledge is being gained via the learning process

The ideas discussed in this paper imply that although there is a stated desire for divergent and new knowledge, in fact it is very unlikely to happen. Take the analogy of a washing machine. If the clothes are to be really clean (attainment of new knowledge) and not reflect previous dirt (experiences) then all the water must be drained out of the system before new water is put in. Even if only a little dirty water remains it will taint the entire rinse. The learning organisation routines discussed in this paper define residual dirt as clean, or at least acceptably so. However, if the system is closed it will never be possible to get really clean water and so real new knowledge will be unattainable. Some incremental development may occur but transformation seems very unlikely.

For a learning organisation to be effective in encouraging competitive advantage via ongoing development leading to transformational change it would need to be able to turn Figure 5 back around and to encourage the collection and creation of new, useful knowledge. However, as has been outlined in the paper the models do not appear to provide such a solution. The models all base their success upon the encouragement of individual learning that will develop knowledge that can be shared. The actual learning is failing to develop such new knowledge and therefore the learning organisation will not develop the underpinning knowledge it requires to be a strategic tool. There is potentially more serious implication as well.

The success of a learning organisation is to set up learning systems within a company that will enable it to stay ahead of the competition and to set up successful strategic vision. The importance of sharing knowledge is emphasised as is the need to ensure the whole organisation is moving the same way.

This may develop the prospect of actually misleading the organisation and encouraging it to move more rapidly in the wrong direction. The continuing emphasis upon sharing processes and knowledge that will close the system may lead to the ironic conclusion that the learning organisation will actively damage the strategic future of the company. The deep-rooted belief that learning will lead to new knowledge will encourage the organisation to believe that it is managing itself well, whereas if it is focussing upon the wrong areas of business, the reality maybe otherwise.

## **Conclusion**

This paper sought to look at whether learning organisations could facilitate knowledge acquisition and transfer. The actual process of gaining knowledge is seen to be a self-referential, constructive one that leads to at least a partial closure of the system. Thus organisational decision-making will become reactive, reflecting the filters already in place. However, the learning organisation is trying to gain transformation through being pro-active. The two cannot both be possible and this undermines the potential for transformation, which is the stated route for achieving competitive advantage.

The sum total of the different issues preventing effective knowledge acquisition and transfer are mountainous problems, but the learning organisation routines offer neither circumnavigation nor clearance. Rather, they may legitimate ineffective, circular processes and may actually turn the process around completely so that the organisation is both starting and finishing the process of knowledge acquisition. It seems that there are so many problems with the processes of both knowledge acquisition and knowledge transfer that knowledge development on the scale anticipated by learning organisation theory is often not achievable. Far from facilitating the development of knowledge, the desire to become a learning organisation may actually hinder it.

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[2] See for example: Senge, 1992; Pedlar et. al., 1989, Goh, 1998.

[3] See for example McElroy, 1999; Senge, 1992; Goh, 1998

[4] See for example: Thubin, 1994; Goh, 1998; Senge, 1992.

[5] See for example: Wishart et al., 1996; Senge, 1990; Kofman & Senge, 1993; Gephart, 1996; Pedlar et al. 1989; Teare, 1997; Dovey, 1997; Goh, 1998; Watkins & Marsick, 1993; Mabey & Salaman, 1995; Simonin, 1997; Nevis et. al., 1995, Clute, 1999)

[6] See for example: Gephart et. al., 1996; Kofman & Senge, 1993; Goh, 1998; Wishart et al., 1996; 1996; Nevis et. al., 1995,

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