The Development of Language for Implementing IT Within a Learning Organisation

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Abstract: This paper explores the role that language can play in the development of technologies or other processes within an organisation. Examples and lessons from the literature of the learning organisation are looked as a key in the development of language. The paper uses a practical example of a customer complaints management system to demonstrate how the theoretical insights discussed in this paper can be put into practice. Finally the authors propose that a common organisational language can be developed. Then the design and use of IT for learning within organisations can be achieved.

1. Introduction

The learning organisation implies being able to learn within complex structures (Appelbaum and Gallagher, 2000) as well as alter routines that mental and structural forces (Senge, 1990) place upon an organisation. This paper acknowledges the difficulty in this area and briefly discusses the terms that have been used interchangeably throughout the literature. The main contributors to the area of the learning organisation and organisational learning, such as Argyris and Schön (1978), offer only one perspective while others such as Senge (1990) and Pedler, Burgoyne and Boydell (1997) offer alternatives. Therefore, for organisations to implement learning technologies many perspectives must be examined. The paper then explores the role of language and how language can play a role in the learning organisation.

Appelbaum and Gallagher (2000) note the increase in an organisations change in structure to meet the current demands of business. The resulting changes, driven by information technology and involved schemes such as business process re-engineering (BPR) (Hammer and Champy, 1993), resulted in downsizing and the loss of individuals who possessed valuable knowledge. If these individuals can place their knowledge in the technological domain and recreate and develop new forms of knowledge then organisations may find they can become more innovative and competitive than relying on just the 'T' factor of information technology. For this to be achieved, more emphasis has to be placed in systems thinking and the use of language. Thus, if organisations fail to address the individual, the organisation and the technology equally in their systemic

interrelationship, they may find little value in pursuing learning technologies for developing a learning organisation. A case study is used to show how the theoretical debates discussed in this paper can apply in practice. Finally conclusions are drawn from the case study.

2. The learning organisation and the role of language

The survival instinct of an organisation usually takes the form of profit generation even though not all organisations' prime motive for existing is to make a profit. However, the organisations that do look to make a profit can view learning as a way to enhance their competitiveness. Garvin (1993) concurs as he feels, that to continuously improve, organisations need to commit to learning as a lack of learning increases the chances of copying old practices that may not be suitable in the current environment. Viewing the world differently may present new opportunities for individuals within organisations to increase the competences of the organisation. This may result in a more efficient performance compared to competitors. As the world becomes more complex the aspect of certainty becomes distant so learning has been changed to respond to the changing environment (Choueke and Armstrong, 1998; Garratt, 1999; Lee and Bennett, 2000). It is not a simple matter for individuals to decide to adopt the philosophy of a learning organisation. The main factor in developing a learning organisation comes from the culture, which allows the learning to take place (O'Keeffe and Harrington, 2001). Here lies the first problem, as all individuals who share a culture understand what the underlying values of the culture entail. Therefore, all individuals who are to participate in a culture of learning

have to understand what a learning organisation is.

The simplest definition of the learning organisation can be described as "*one that facilitates the learning of all its members and continually transforms itself*" (O'Keeffe and Harington, 2001 p137). The main problem with the research about the learning organisation is that a precise definition has not been agreed upon. What is agreed is that the terms 'the learning organisation' and 'organisational learning' is not the same thing (Reynolds and Ablett, 1998). Organisational learning can be described to be taking place where the behaviour of individuals is changed (Reynolds and Ablett, 1998). Reynolds and Ablett's (1998) view of the learning organisation are an organisation in which once learning has taken place, a change in the organisation occurs. The previous statement on the description of a learning organisation is similar to the opening quote of this paragraph, from O'Keeffe and Harington (2001).

The focus so far has been on defining a learning organisation but we now turn our attention to how individuals use language to interact with each other and add meaning to their view of the world. The role of language mainly focuses on the work of Maturana and Varela (1980, 1987) and Bohm (1999). Our attention is then turned to the use of language within the learning organisation.

2.1 An alternative conceptual perspective on the role of human language

The traditional view of cognition and language is based on the metaphor of inside - outside. The outside, or real world, is considered to be the source of information, and the inside, or the brain, is considered to be an intelligent processor of this information, with the mind embedded within it. In this metaphor our observations are merely representations of the outside that are thought to represent the truth and the brain, and the mind within, is the machine that works on these observations to extract knowledge. Mingers (1989) states that a large proportion of the cognitive science is based on the assumption that the human mind works by "*manipulating objective representations of the environment*". Language is therefore used to describe an objective world. Words stand for real things that exist as a true reality independent of the individual observer.

In contrast, more modern views of cognition such as those of enactive cognitive science and autopoiesis (Maturana and Varela, 1980) have moved away from this distinction between inside and outside. Cognition is conditional to embodiment and the ability of an individual to differentiate is thought to be a consequence of that individual's specific structure. Thus, the act of cognition is a matter of interacting with the world in the capacity in which one is able to interact, and not simply an act of processing what is objectively to be 'seen'.

However, since our distinctions are generated through our interactions, then the content of our knowledge is not simply a mapping of reality, but our way of living and understanding it. The knower is the ultimate point of reference. We apply divisions and distinctions in our thinking about the world. However, this fragmentation does not have an absolutely objective existence, as our distinctions are epistemological qualities not 'true' realities.

As humans we exist in language. However, language should not be regarded as a system of symbols that are composed into patterns that stand for things in the world (Bohm, 1999). Language did not evolve just to take in an outside world. Therefore, it cannot simply be viewed as a tool to reveal that world.
Language is a venue for action, coupling the cognitive domains of two or more actors (Maturana and Varela, 1987). Therefore, it is often preferential to discuss languaging as an act rather than language as a symbolic notation.

Social systems exist for their members within the operational coherence of languaging together: 'Human agreements decide what is true and what is false. It is what human beings say that is true and false; and they agree in the language they use. That is not agreement in opinions but in a form of life' (Wittgenstein, 1967).

2.2 Language and the learning organisation

The use of language is a very important issue in every aspect of our lives. It is especially important in the understanding of how to coordinate activities within an organisation. If an individual (Person A) communicates with another individual (Person B) on how best to tackle a problem, but the second individual (Person B) attaches a different meaning to the communication, compared to the first individual (Person A), then they do not share the same

language even though they can communicate together. Here may lay a problem with the understanding of the learning organisation. Senge (1990) concurs as he feels that every individual must share the same viewpoint of the system under discussion.

The discussion of Argyris (1999) on logical paradoxes can be used as an example of the problems of language and attaching meaning to that language. A logical paradox can be described as a contradiction embedded in the actions that are communicated (Argyris, 1999). Argyris (1999 p92) uses the example of a statement that reads, "*I am lying*" which can be taken as true. Argyris (1999) then points out that if the statement is true then no '*lying*' has taken place and the statement becomes false (Argyris, 1999). The main reason paradoxes like the example just given occur is due to the fact that individuals create meanings that are inconsistent, but have disguised the fact that they are doing so (Argyris, 1999). If these paradoxes are occurring within organisations then the same language is not being shared either through design or through other factors. Therefore, this use of language has to be understood and shared for a learning organisation, at least in the minds of the individuals of the organisation, to be brought into existence.

Krippendorff (1995) discusses the features of design and notes that designers are more concerned with the end product than on how the idea for the product occurred through the communication mediums of speaking, presenting and disagreeing. It may be theorised that Krippendorff (1995) was specifically talking about the design of physical products that are sold to a consumer. However, this issue can also be applied to the design of an organisation and the design and use of information technology. The focus is mainly upon the end in itself, for example, how a newly designed organisation will better function or what benefits a new information technology system will bring.

Little attention is focussed upon the discussions on how about firstly a newly designed organisation or information technology system came into the discourse of all individuals involved and secondly, how this discourse evolved to create the new organisational form or information technology system that is now in place. Krippendorff (1995, p138) states "*Notwithstanding dictionary definitions, I see discourse as a particular way of languaging, as a social*

phenomenon with a life of its own". From the definition on discourse, through Krippendorff (1995), a learning organisation therefore must develop a discourse that is given a life that all individuals can develop together which becomes embedded in the culture of the organisation.

3. Information technologies in learning organisations

Lee and Bennett (2000) feel that through the impact of globalisation, organisational restructuring and information technology has forced organisations to learn to operate in new ways. It may be thought that these new technologies are being implemented as a solution to the ever-increasing pressures of globalisation. However, Mingers (1989) feels that the environment is not responsible for changes to an organisation (such as the requirement of new technologies) but may select specific states that are offered by an organisation's structure. If the organisation has developed the right technologies and uses them in an appropriate manner, the organisation will be able to interact more successfully with the current environment compared to its competitors. Therefore, the rapid development of new information and communication technologies (ICTs) are playing a role as the infrastructure that is creating networks and providing an opportunity for organisations to learn (Pemberton and Stonehouse, 2000) to interface with the environment. These technologies may provide the raw data that individuals may require but it is up to the individuals themselves to analyse the data. Analysis can be described as having three dimensions: namely synthesis, hypothesis and implication (Westney and Ghoshal, 1994). The synthesis dimension can be described as assembling data to make a complete picture (Westney and Ghoshal, 1994). Hypothesis refers to using the data to create 'what if' scenarios, while the implication dimension refers to future and possible actions of competitors (Westney and Ghoshal, 1994). From the analysis of the data it then has to be communicated throughout the organisation.

Technologies such as software packages, the management of documents, e-mail and intranets are just some examples of tools organisations may employ to enhance learning (Pemberton and Stonehouse, 2000) and communicate data. However, allowing all individuals to have access to the data that flows through these technologies may not provide the required learning. Henderson

(1997) notes that deciding what may be classed as true is very difficult for individuals but is exceedingly more difficult for groups such as an organisation. The individuals may observe and interpret the same data differently (Henderson, 1997). Therefore, an organisation focusing upon the technological factors to create a learning organisation will find disappointing results as all members may interpret the same information differently.

Technology allows the capture and placement of data into another context (Zuboff, 1988). If the organisation does not have a shared language then the data may just remain as data that has been transformed from one state to another, with no function for learning to take place. Thus, the traditionally established metaphor of 'the transmission of information', in which communication represents something, which is generated at a certain point and carried through an information channel, or conduit, and delivered to a receiver, is misleading. It presupposes that what happens to the receiver (listener) is predetermined by the perturbing agent, not by the structure of the receiving entity, while the phenomenon of communication depends not only on what is transmitted, but what happens to the person who receives it. Communication, therefore, is a matter of mutual orientation, primarily with respect to each other's behaviour, and secondarily with respect to some subject. (Whitaker, 1996). Language as we have argued is a venue for action, a way of life (Wittgenstein, 1967) and not a means for transmitting information

The understanding of language as a place for action presupposes that a language has to be developed prior to the technology, that is to say language has to emerge in the conversation for action. Through the applications of hardware and software the language of the organisation can be institutionalised to suit the organisation's requirements. While institutionalisation is important, it has to go hand in hand with the possibility for further developing the language and thus the institutionalised practices. In an attempt to understand the problems discussed in this paper, a practical project presented itself within a manufacturing organisation. The organisation is trying to develop a customer complaints management (CCM) system to manage complaints the organisation receives. The initial and current development of this project is where our attention is now turned.

4. The development of a Customer Complaints Management (CCM) system

Throughout this paper an emphasis has been placed firstly on the statement that language must be developed before any technology and secondly, through the use of information technology organisations have to learn how to operate in new ways. Therefore, we have stated that for organisations to implement and use learning technologies the use of language must be developed between individuals. Both the authors of this paper are half way through working on a customer complaints (CCM) project, within a manufacturing organisation. The organisation is hoping to use a technology solution to record, manage and solve its customer complaints. A presentation from a leading technology company has already taken place. The customer service department is currently responsible for handling customer complaints but the planned system is being designed so that any individual who receives a complaint can input the problem into the technology.

The need for a system to handle customer complaints was highlighted through the company's annual International Organisation for Standardisation (ISO) audit. An element of the ISO accreditation requires a system to record and handle complaints; this is currently not in place. Through the findings of the ISO audit the senior management have empowered a team to tackle the problem.

An initial brainstorming meeting was held where the first author attended to get a better insight as the current thinking and direction the project might take. Initial discussions on the various software packages that might be suitable were discussed and a brief bullet list on what constitutes a customer complaint was drawn up. However, it is noted that momentum for the project had not gathered pace and was still waiting to develop. It was at this point that the first author asked to join the project team with the initial emphasis on exploring the use of language to develop what can be classed as a learning technology. The project consists of individuals from customer services, workshop, repair shop, shipping, planning, and technical support departments.

4.1 Methodology

The literature on the learning organisation and language has been discussed. However, in order to develop, more effectively, a shared language that all participants in the team can

use to develop the technology it is important to reflect on the guiding methodology that is currently used. Checkland and Scholes (1990) soft systems methodology (SSM) is looked at, by the authors, as a methodology that is rigorous and flexible enough to allow the type of data that would be suitable to develop a shared language, as well as help in the development of a suitable technology. However, it should be noted that the methodology has been applied but each of the stages Checkland and Scholes (1990) advocated have been further developed to encompass the creation of dialogue and the development of a shared language. It is not feasible to go into greater detail about what the soft systems methodology contains, but information can be found through Checkland and Scholes (1990) or online Couprie et al (no date). Figure 1 shows a diagrammatical representation of the further developed SSM methodology used by the authors of this paper.
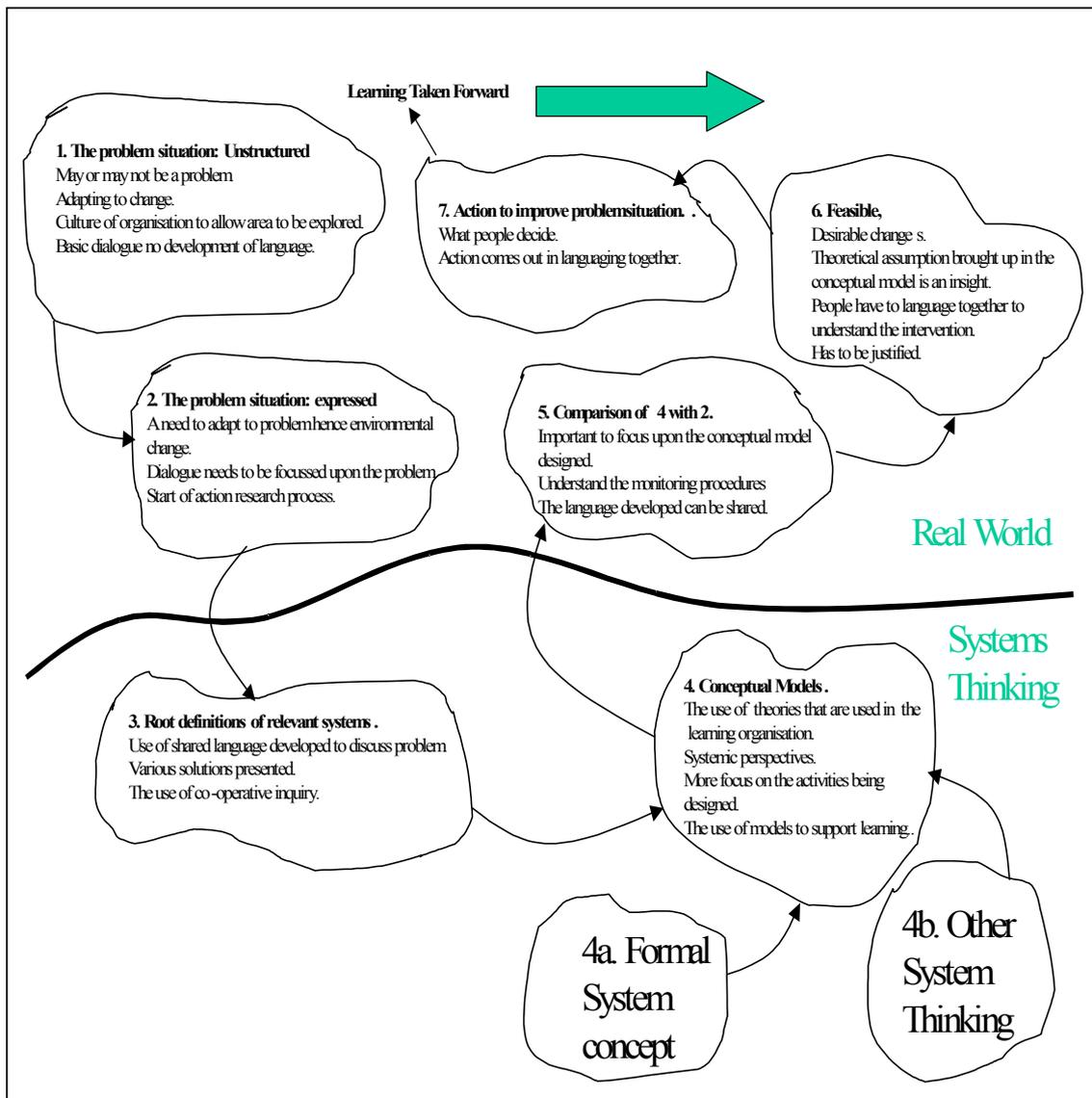
Figure 1: The Further developed SSM methodology Adapted From Checkland And Scholes (1990)

The SSM methodology contains a seven-stage process. It should be noted that the bold type displayed in figure one is Checkland and Scholes (1990) original stages of SSM. The authors feel by developing the methodology to encompass the stages as they are displayed in figure one will provide a learning environment to develop solutions to problems that the organisation may face. Checkland and Scholes (1990) explanation of the SSM approach seems to be mainly practitioner led. The SSM methodology displayed in figure one has tried to remove this emphasis and place it in an increased joint collaboration between all participants (including researchers). Therefore, the use of co-operative inquiry (see Heron and

Reason, 2001) is looked at as a technique to allow this collaboration to happen jointly. At present stages one and two have been completed.

4.2   Initial approach

As has been mentioned, the project is only half way completed. This section will therefore discuss what was developed initially while the next section (current research progress) will go into more detail on how the data has been collected so far. Using the SSM approach stage one *the problem situation unstructured* (Checkland and Scholes, 1990) emerged from the ISO audit and the initial discussions and debates that the team held. It should be noted at this point that the methodology was not brought to the project team's attention. It was felt that more work should be completed to prove to the team the commitment the first author had to the project. Secondly, it was felt that bringing in techniques from academia, so early, might deter some of the team members from finding value in the approach. It can be summarised that this stage of the methodology

(stage one) occurred through a two-week ethnographic study that took place from the 4 August until the 15 August 2003. The main purpose of the ethnographic study was to gain a better understanding of how the organisation worked from written to unwritten rules and any power relations that might exist as well as collect documentation.

4.3   Current research

At present the research has just finished stage two of the SSM methodology, *the problem situation expressed*. It was through this stage of the methodology that the methods and techniques that were used helped to develop a shared language. To help the team express the problem situation a technique called the appreciative inquiry method (AIM) (West, 1995) (for a more detailed description see Troxel, 2002) was firstly conducted. Two sheets that had the statements "*What is a customer complaint?*" and *"Reasons for handling a customer complaint"* were handed to each participant in the format shown in figure 2.
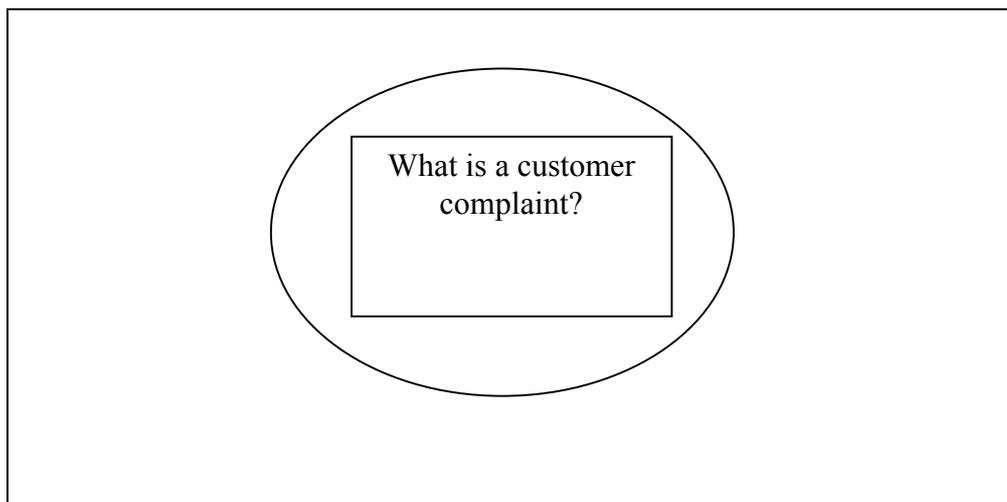
**Figure 2:** The Appreciative Inquiry Method Adapted From West (1995)

Each participant was given both statements and had to identify what they felt could explain 'what a customer complaint was' and 'the reasons for handling a customer complaint'. Anything a participant thought of was written on the sheet stemming from the initial statement. Categories that are similar could be grouped together. The purpose of this technique is to get each individual's perspective on the problem area. The statements are designed to be open so that each individual's personal and work experiences could be captured in a different format than an interview or open discussion

could. The data that was collected from this stage fed into the next stage of the data collection method, which were the semi-structured interviews.

Each interview was conducted by the first author through his interpretation of the problem area as well as the statements received from the AIM work sheets. Each interview was designed to allow enough flexibility so that each participant could interpret the question any way they felt. However, it must be mentioned the questions were not so totally vague that participants had to ask for clarity.

Each interview lasted between 20 – 45 minutes. The interviews took two weeks to conduct with two interviews commencing each day. The interviews were transcribed and analysed by the first author. From the analysis

of each interview a 'rich picture' (figure 3 is an example) was constructed (see Checkland and Scholes, 1990 or Ryan, 2001 for a quick description).
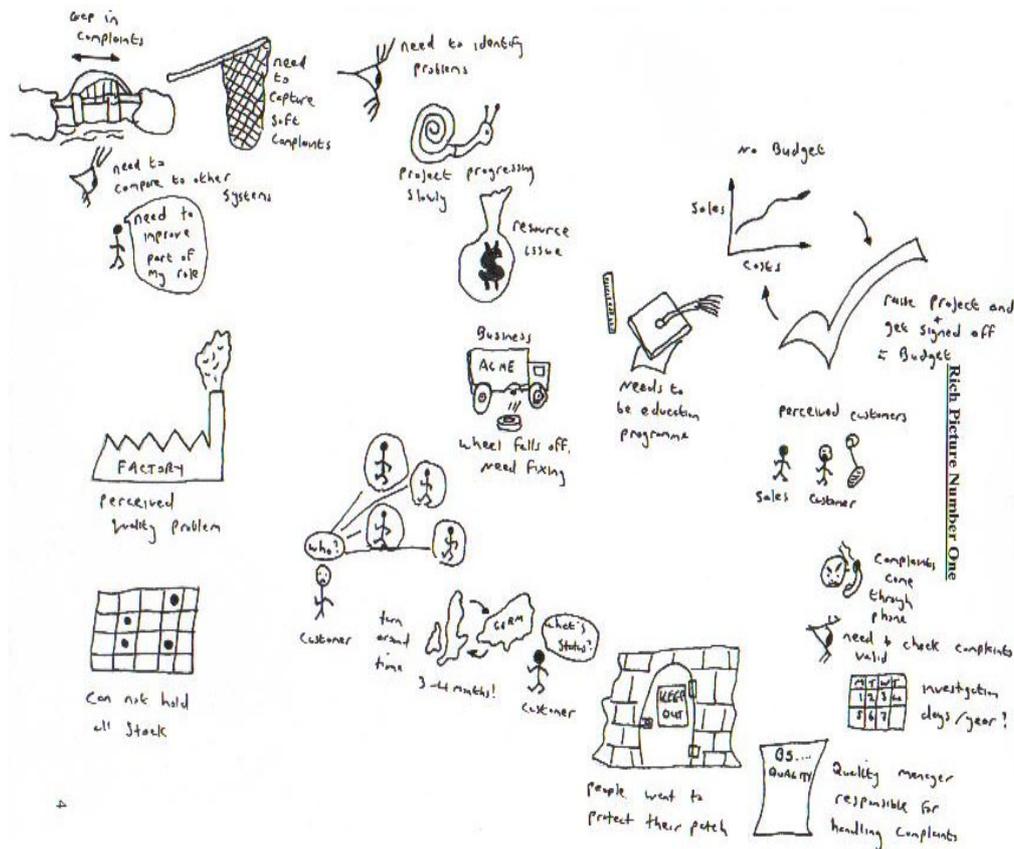
Figure 3: A rich picture from the research project

All interviews were kept anonymous, were not placed in order the interviews were conducted, and were referred to only by a number. A brief summary accompanied each rich picture along with both AIM work sheets that had all of the participants' statements grouped accordingly. The interviews and the AIM worksheets were then placed into a document and were then fed back to the participants. The initial reaction to the work was good with one participant stating, "*This is more comprehensive then we could have achieved*" (researcher's diary November, 2003). It was emphasised that the document is designed to be a discussion tool. It is hoped that participants can look at each picture in dialogue with other team members about whether they agree or disagree with the view. The dialogue that will be created can then be the start of a shared language, which will be used to develop the appropriate technologies.

5.   Future work and discussion

This paper has tried to give as much detail as possible on a project to develop a customer complaint management system within a manufacturing organisation. The project is just one aspect of the first author's PhD work, which is looking at learning technologies within learning organisations. It can be argued that the techniques used to try and create a shared language have problems due to the first author designing, conducting and analysing the interviews. The outcome of this research can be argued to be the first author's interpretation of events that have taken place (c.f. Kemmis, 2001). The authors acknowledge this problem. In answer to this problem the work produced is not designed to be a definitive guide as to how the project is to move forward. The document was designed to be used for a discussion tool.

Future plans include encouraging each participant to present their own rich picture to the group. If an individual feels strongly that a picture does not reflect what that individual believes then they can present their own view. This was another reason why each picture was kept anonymous so more focus could placed on what the picture was trying to communicate rather than who said what.

The future direction of the project remains to be discussed. The conclusion of the project has been announced as April 2004. Therefore, it leaves the project team just under three months. Up until this point the project has mainly been researcher led. It is envisioned the second phase of the project will be where all participants (including the researcher) will take the project forward together and not consider the researcher as the project leader. The outcome of the project will provide an insight into how a co-operative approach (see Heron and Reason, 2001) to implementing technology, as well as a focus upon the language developed, can be of value to an organisation when compared to other methods. It is felt that the work that has been undertaken so far is valuable to both the organisation involved and to the authors of this paper. However, only when the project has been completed can the true lessons be reflected upon.

6. Conclusion

This paper opened with a discussion on the learning organisation and the role of language. The paper has identified that the role of language has been under- researched. It has been argued that language, as stated by such authors as Krippendorff (1995, 1996, 1997) and Whitaker (1996), is very important in creating a learning capability. Language is viewed as the meaning we create to our worlds and as a venue for action (Maturana and Varela, 1987). Language is used to co-ordinate activities within an organisation but is also used to create a shared view of the same system (Senge, 1990). It is the difference in viewing the system as the same through the use of language, which is causing logical paradoxes that create inconsistent meanings (Argyris, 1999). When individuals share inconsistent meanings of a problem and then come together to try and solve the problem, the outcomes that are not expected occur.

As technology is being implemented to solve business needs it is vital that a shared language is developed before any technology is implemented. In order to explore these problems the authors have expanded the soft systems methodology (SSM) as developed by Checkland and Scholes (1990). It is hoped that the methodology, as espoused by the authors of this paper, that the issues of language and the development of a learning environment can be created and used as a way to tackle problems an organisation may face. The practical case of a customer complaint management system has been used to demonstrate how the ideas discussed in this paper can relate in practice. At current the project has reached the halfway point (or stage two of the methodology).

The authors believe that unlike technology artefacts individuals speak to each other and construct themselves in language, which is continually changing (Krippendorff, 1996). If this language is not developed together the use of technology to solve problems can only cloud the issues that are attempted to be solved.

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