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ABSTRACT
                A 3-year research program on workplace learning was based on
action research and involved the gradual implementation of "Work Activity
Briefings" every 2 weeks or whenever a major task was to be undertaken at
selected construction sites managed by an Australian mining and construction
company. The briefings were regular meetings between all those involved in
the project. At the meetings, researchers obtained information from
participants about the conduct of the briefings and ways to improve them and
gathered participants' perceptions of difficulties, benefits, and changes in
work practices. The briefings gradually became more democratic and involved
more levels of workers in their own learning and training needs, resulting in
a better work environment as well as completion of projects more quickly and
with better safety records and quality. (The paper argues that properly
conducted workplace learning [i.e., using a heutagogical approach, which
studies the processes that enable self-determined learning] can provide a
confluence for systemic and training solutions to complex organizational
problems. According to the authors, drawing training solutions and systemic
approaches together provides an opportunity for learning--organizationally
and on the part of individuals--that increases both competency and the
chances for creating a learning environment that might make the change
enduring. There are 22 references.) (KC)

Workplace Learning: What's The Rate of Return?

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Abstract

The purpose of this paper is to draw together the results of an ongoing research program into workplace learning and the some thinking about the development of human capability. We make the distinction between information, skills and learning. More than that, we suggest that it is the latter that makes the difference but it is often poorly harnessed in the modern workplace.

This paper argues that properly conducted workplace learning can provide a confluence for systemic (socio-technical design) and training solutions to complex organisational problems. In fact drawing these two main elements together provides an opportunity for learning, organisationally and on the part of individuals. It is common for managers and trainers to use either a training or a systemic solution to attempt to address a particular problem. The training solution usually results, at best with competency attainment (knowledge and skills), while a systemic solution often has little regard to the essential elements of socio-technical design and creating a learning environment that might make the change enduring. More often than not there is a poor rate of return on training and change initiatives.

Perspectives and Theoretical Frameworks

Think for a moment of two things you have learned that have made a real difference in your life. Keep them in your mind until the end of the paper.

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This research program has been supported by three key theoretical constructs: self-determined learning; the concept of capability; and socio-technical design.

Education has traditionally been seen as a pedagogic relationship between the teacher and the learner. It was always the teacher who decided <u>what</u> the learner needed to know, and indeed, <u>how</u> the knowledge and skills should be taught. In the past thirty years or so there has been quite a revolution in education through research into how people learn, and resulting from that, further work on how teaching could and should be provided.

Heutagogy (Hase and Kenyon, 2000) is the study of the processes that enable self-determined learning and is concerned with how to harness the learning that occurs as a part of a person's total experience. Heuatagogy is interested in approaches to learning that are not teacher-centred but person-centred. This idea is not new and draws on humanistic and constructivist themes that can be followed through the philosopher Heider (Emery, 1974), phenomenology (Rogers, 1951), systems thinking (Emery and Trist, 1965), double loop and organisational learning (Argyris & Schon, 1996), androgogy (Knowles, 1984), learner-managed learning (Graves, 1993; Long, 1990), constructivism (Fosnot, 1996) action learning (Kemmis & McTaggart, 1998), Capability (Stephenson, 1994), and work-based learning (Gattegno, 1996; Hase, 1998), for example.

Apart from the philosophical reason for looking at how to harness real learning in real situations there is a more pragmatic reason, particularly for post-compulsory education, that has to do with the world in which we currently live. Complexity Theory (Waldrop 1992) tells us that we live in a world where change cannot be predicted and where people and organisations will need to be adaptable (Hase, 2002). It is a world in which: information is readily and easily accessible; where change is so rapid that traditional methods of training and education are totally inadequate; discipline based knowledge is inappropriate to prepare for living in modern communities and workplaces; learning is increasingly aligned with what we do; modern organisational structures require flexible learning practices; and there is a need for immediacy of learning.

It is our view that heutagogical approaches to learning will help people to remember how to learn and will better prepare them to manage in an increasingly complex world. The thrust that underscores these approaches is a desire to go beyond the simple acquisition of skills and knowledge as a learning experience. They emphasise a more holistic development in the learner of an independent capability (Stephenson, 1994), the capacity for questioning ones values and assumptions (Argyris & Schon, 1996), and the critical role of the system-environment interface (Emery & Trist,1965).

The ability to learn is one component of what has been described as being capable (Hase, Malloch & Cairns, 1998; Stephenson, 1994). In addition to knowing how to learn, the capable person is able to use competencies in novel as well as familiar situations; is creative-able to 'think outside the box'; has justified confidence in self (self-efficacy); can take appropriate risks; and works well in teams. Thus capable people are more able to

respond to the demands of a rapidly changing and ambiguous environment where there is a requirement to do more with less, turn a profit no matter what or be innovative.

Application of the capability concept has largely involved the creation of innovative learning experiences that help develop the elements of capability in individuals (Graves, 1993; Stephenson, 1994; and Stephenson & Weil, 1992) in both education settings and in the workplace. More recently, in Australia, we have been interested in not only how work based learning can develop capable people but also how human resource management and development systems may also be designed to enable capability in everyday work (Cairns & Hase, 1996; Hase, 1998). In a study of a number of different Australian organizations Hase, Cairns & Malloch (1998) concluded that to develop capable people and capable organisations, "requires major paradigm shifts in the way in which management, education / training and workplace are conceptualised". In particular they argue that the capacity to learn is highly significant and along with others believe that "people and organisations need to learn, to construct meaning from identifying and solving problems they face".

The third theoretical construct that has influenced this research has been that of socio-technical design which concerns the person-work interface. One of the key elements of socio-technical design relevant to this research involves notions of participative democracy and systems thinking (Argyris and Schon, 1996; Emery and Emery, 1996). It is assumed that people will have a better quality of working life and perform better at work if they are deliberately and systematically involved in their future. Our interest has been in changing the culture of a workplace, which has been traditionally hierarchical with clear divides between work groups on the basis of status and work allocation to one of involvement and collaborative decision making.

It is this theoretical background that drove this research project that concerns an Australian mining and construction company. The company has, for a long time, recognised the incredible importance of the capability of its workforce in relation to its competitiveness in a global environment. However, it has not always been able to translate this espoused theory into theory in action at the workplace. The rest of this paper reports the process and results of a journey to change this culture and implement some of the principles described above.

Methodology

This case study was based on Action Research, which can best be described as a meta-methodology that involves cycles of reflection and action, is usually, but not always participatory, and leads to some sort of change (Dick, 2002).

The focus of the study, which was conducted over a three year period, was the gradual implementation of what are called Work Activity Briefings (WABs) at selected construction sites managed by the organisation. These WABs were regular meetings between all those involved in the project. The researchers observed and took notes in these meetings as well as obtaining feedback from participants about the conduct of the

briefings, ways to improve them, and their perceptions about benefits, difficulties and changes in work practices. Convergent interviewing was used to provide greater rigor to data collection and enable the research to be data rather than theory driven. The research study was not imposed rather it was part of the process of implementing an innovative work practice. While the organization was interested in a practical outcome we, as researchers, simultaneously sought a research outcome, which is typical of the Action Research approach and differentiates it from action learning which seeks only a practical outcome.

This data was used to progressively improve the WABs as well as monitor their effectiveness. On one occasion information was also obtained about improved safety (lost time from injury), time for project completion and absence from work following a request from the CEO of the organization.

The Journey

Prior to this study the organization which, because of its mining and construction activities, was project- based and hierarchical. Engineers ran the projects and were the primary decision makers with input diminishing as one descended the organizational tree. It was commonly accepted that there was poor communication and little respect between those who managed the projects and those who provided the skilled labor. Learning was confined to workers obtaining competencies and accreditation for operating the various types of complex machinery. This process was driven by on-site trainers and the workers themselves. The priority for project managers was project completion and this competency attainment was seen as secondary and was restricted. Any other type of learning was incidental but no doubt occurred out of sight. The organization and its approach to learning had many of the characteristics of Argyris and Schon's (1996) Organizational Model One, specifically high control of the environment, single loop learning and low levels of involvement. Importantly, though, there was a high level of commitment to its people throughout the organization, which provided a foundation for change at the project level.

The first research cycle occurred as part of the construction of a modern medium security correctional facility in an area of high unemployment but having a wide community of rural workers and railway trades and non-trade people. The project management sought to employ as many local residents as possible and to involve these workers in "workplace teams". These teams were given the task of work scheduling, programming, the skill development of its people, and accounting for the activities assigned to them. In effect these teams were implemented to monitor and assist the less-skilled local residents rather than any attempt to change organisational culture. However, it soon became apparent that the participatory process was extremely effective in ensuring effective communication, improved reported work satisfaction and early identification of problems. In addition learning appeared to be enhanced largely through the improved communication.

This collaborative process was further refined and developed in two other constuction projects. The process was then given the name of Work Activity Briefing (WAB) and had a more inclusive approach for the work activity participants, because the engineering

personnel and the management/supervisory staff provided additional support. Giving the process a name with words such as 'work' and 'briefing' made it more likely to be accepted by participants, especially project managers who are largely very outcome-focussed people. Our advice was that 'teams', 'self-managed' and action learning would lack meaning and acceptability. The stated goal of the WABs was to involve all workers in decision making about the conduct of the project that would improve safety and project completion. Meetings were held about every two weeks or when there was a major task to be undertaken in the project, such as the sinking of underwater pylons in the construction of a wharf, which is a particularly dangerous exercise.

The WAB developed to where there was a formal skeleton around which critical information was hung. Initially the briefing was facilitated by human resource development specialist who was not a member of work teams but was employed on the project. Initially the facilitator had to work hard to involve all participants especially those who were traditionally not involved in decision-making or meetings. As well as a low skill in these areas many participants were sceptical about the idea that what they thought would make a difference. The view was that they had little power. Gradually communication opened up and confidence increased to the point where the facilitator was able to step back.

A pro-forma document was developed to record essential pieces of information relating the activity including the technical information, the risks, the safety considerations, previous experience that has application and the skills that exist/ missing are included in the spaces provided. This document provided a focus for future WABs as well as being concrete evidence of the inclusiveness of the process and outcomes.

To assist WABs to take personal control a manual was developed with guidelines for participants on how to make them work. It was clear, however, that some leadership was required early on to help the more able to resist the urge to take control and the less powerful to speak. Facilitation is a complex skill and there is no guarantee that groups can overcome power relationships and lack of skills to manage the process by themselves. However, it was evident that everyone from engineers to labourers learned essential communication and groups skills not from undertaking a formal course but through their experience.

Such information as the task /activity description, the engineering detail, the risk analysis, the control requirements, the quality assurance requirement, the skill development needs and the action plan became points for dialogue and agreement. The outcome of the dialogue represented a harvesting of the available knowledge, skill and experience, requisite in the activity of participants. The advantages of this collective wisdom became clearly evident to participants. One project manager admitted that he was very sceptical about the process initially and admitted to not being a 'touchy feely' person. He said that he would always include WABs on future projects because of the obvious benefits.

WABs have become popular because they offer a range of advantages such as synergy based on the ability to access a pool of experience and knowledge resident within the

team. Also, there was an evident ability to rapidly inform and develop knowledge within the group and an increased level of involvement / commitment on the part of the group members. The aim of the activity is to identify and apply the best solution to a problem or opportunity within the project context.

In socio-technical systems parlance, self-managing teams provide a mechanism by which the technical needs of work and the social needs of the individual and group are able to be drawn together, an improvement in the quality of working life. The Work Activity Briefing (WAB) process employed with this organisation brings together all parties involved in the activity. The power relationship changes for the project manager and the engineers. As the workers are able to provide new knowledge, based on their experience, which is outside the knowledge of the engineers, the power relationships change for them. The shifts in how the workers are now 'seen' suggest a level of equality and acceptance. A change in the normal 'truth' applied by management towards labour is changed and thereby the manager or engineer is changed. Gradually there is a shift towards what Argyris and Schon's (1996) Organizational Model Two and double loop learning where underpinning values are challenged.

Using this description we can see that the requirements and specifications of the plan will govern the parties in the activity and, therefore, their actions. The managers and supervisors will exercise power in coordinating the arrival of materials, the workers will exercise power through the application of their skills to the tasks without having to wait for instructions and directions. Indeed the participants will, in fact, regulate themselves with the terms of the plan and the project context.

Another aspect of the Work Activity Briefing worthy of discussion is the taken-for-granted assumptions that also govern the bodies involved in the activity. For example those who were part of the dialogue and certainly those who signed the document take for granted that each participant will do their individual best to achieve the desired outcome. That they will exhibit a level of professionalism and skill that will deliver the quality specified. And that they will demonstrate a level of commitment that will ensure that obstacles that might have proven a limiting factor under ordinary circumstances will not prevent the parties from achieving the deadlines. Thus learning became self-determined. At one construction site we found that arrangements had not been made with the client to include formal competency assessment and attainment as part of the contract. Interviews with the construction workers revealed that they had established their own training programs to raise the skill level of the team in the absence of accreditation or a recognized trainer. Clearly there were recognizable benefits for the team and the individual but most importantly the team was self-managing.

The work activity briefing process has been employed in a number of subsequent projects and on each occasion it has been regarded by those participating, as pivotal to the delivery of a project that has exceeded the expectations of the organisation and its client in the measurable areas of quality, time saving, cost reduction, industrial harmony and safety. There was decreased days lost caused by injury, less days as a result of absence, less than predicted times to project completion and reported higher job satisfaction.

An extension of the Work Activity Briefing has been the establishment of Pre-start Briefings in which teams meet at the start of the shift and discuss issues. This was initiated by workers themselves not the researchers. On conception the primary aim was work safety but soon the briefings involved discussing the day's activities and what could be learned from the previous day. Interviews with participants revealed a high level of empowerment, involvement and sense of commitment to the work team. It was clear that learning was taking place even though it was not credentialed and that the learning was an inherent part of what they did rather than an add-on.

It is a well known psychological phenomenon that is very difficult to change attitudes. Thus, shifting people from a tradition of developing and managing people by control to one of trust and empowerment is a difficult task. The quickest way to change attitudes is in fact through changes in behaviour, in this case the application of socio-technical design principles. The work activity and pre-start meetings were a successful approach to this dilemma and are exemplars of shifting organisations to the recognition of how people really learn as well as a means to cultural change.

Conclusion

My guess is that the two things that you thought about at the beginning of the paper that you learned that made a difference in your life were not learned through formal education but as the result of your experience.

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