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(Chapter in BOOK)

LEARNING CONVERSATIONS:
The Skill of Managing Personal and Interpersonal Learning

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Learning Conversations:
The Skill of Managing Personal and Interpersonal Learning

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TEACHING AS SEVEN MODES OF CONVERSATION

It is the aim of this paper to explore how far a 'skill theory' of conversation can shed light on the process of effective teaching. For hundreds, if not thousands of years the art of teaching has been analysed and discussed. The belief that great teachers are born not trained persists despite numerous attempts to formulate and empirically evaluate some science of teaching. Socrates and Confucius were revered for their outstanding powers as teachers. Jesus Christ is often acknowledged, even among the ungodly, as the greatest teacher who ever lived. (Hence the question - why was he crucified? - which has the academic 'joke' answer - no publications). Great teachers spend their lives conversing with people. Occasionally they talk at people; and since it is relatively easy to record such set pieces as the sermon, the speech, the oration and the lecture it is these that get published and are passed down as 'The Teachings of ….' Recording the essence of conversation is infinitely more difficult. Despite the quality of what was being taught even Plato could only reproduce Socrates teachings as a series of rather clever, if slightly unfair, question and answer games.

Teaching cannot be viewed as one coherent skilled activity without stretching and thus distorting the meaning of the word 'skill' well beyond it's normal usage. Outstanding teachers have a whole battery of 'skills' at their disposal. They can counsel, instruct, design learning situations, raise interest, tutor, direct attention, create learning opportunities, evaluate, present a topic, organise a laboratory, lead an encounter group, explain or clarify a problem; and manage learning. These and the many other ways of describing the skills of the teacher can be systematised by categorising the different modes of conversation which may exist between the teacher, the learner and their resources.

The most common of these is indicated in Figure 1 where the assumption is made that there is a body of public (objective) knowledge for the Teacher/Trainer to present, explain and interpret to the learner.

Related to this is the activity in which the learner has direct access to the resources of the topic but the teacher or trainer organises these resources making them available and carefully guiding the learner to use them effectively.

Together these two relationships between T,L and R probably cover 60% to 70% of all orthodox teaching and training time. B F Skinner has probably made the most coherent attempt to explore teaching and training in these 'Figure I' and 'Figure 2' terms.

A third relationship is also traditionally valued, that of 'teacher as resource'. (Figure 3)

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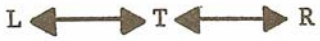

Figure 1. The teacher as presenter and interpreter to the learner.

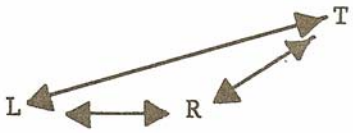

Figure 2. The teacher as organiser of the resources

Figure 3. Teacher as Resource

Figure 4. The Learner as Resource

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Figure 5. The Learner as Person

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Here we move from 'second hand' teaching (i.e. the passing on of existing well established knowledge) to teaching which is based in first hand experience. The teachers either teach from their own past experience or being XXX's (For XXX read any topic e.g. Engineer, Cook, Writer etc.) they serve as examples of XXXing in action. This probably covers another 15/20% of organised teaching and training time.

There are however at least four more significant ways in which the teacher and learner can most effectively relate to each other and to their resources.

Figure 4 indicates that type of tutoring activity in which the teacher/trainer helps the learner to recognise themselves as a resource. This can be either by recognising that "they knew 'it' already" and were just not accessing it; or more significantly, it can help the learners to become aware of how much of their day-to-day experience is relevant to the topic being studied, thus making it 'real' for them.

Apparently similar to Mode 4 but experientially very different is the conversation in which the Teacher helps the Learner become more aware of herself or himself as a person. Carl Rogers is perhaps the strongest exponent of this view of teaching.

These awareness raising activities perhaps occupy another 10/15% of conventional Teacher/Trainer time.

Finally there are the activities in which the Teacher helps the Learners to become more aware of themselves as Learners. Again this can be divided into two related activities. Figure 6 depicts that activity in which the Teacher helps learners to identify their personal myths about themselves as learners and to move towards a more empirical and optimistic view of their own capabilities.

Figure 7 attempts to depict the situation in which the Teacher monitors how the Learner is learning (i.e. the Teacher investigates and records the Learners interaction with the resources) and tries to help him or her become more effective.

This view of seven roles for the teacher/trainer probably raises as many questions as it solves, but it does highlight the central 'skill' of effective teaching. The teaching process is conversational. Even in role 1 the effective teacher does not just present the topic through a one-way screen. He or she is concerned with the learners understanding and comprehension, with their ability to repeat, demonstrate, translate, summarise, evaluate and go beyond what they have learned. The whole tenor of Skinners work was the importance of the trainers observation and precisely timed responses to the learners changing behaviour.

In our view Skinners shaping of a pigeon to play ping-pong involved him in a rather restricted but very precise form of conversation with it.

From Role 1 to Role 7 if we are to understand the nature of the teaching/learning process we must understand the nature of conversation.

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Figure 6. Personal Myths of Learning

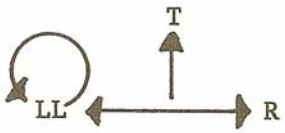

Figure 7. Raising Learners awareness of the process of learning

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TOWARDS A THEORY OF SKILLED BEHAVIOUR AND EXPERIENCE

Until quite recently the description of conversation has been solely the province of the 'arts'. Novelists, poets and playwrights occasionally produce beautiful examples of the conversational process. But it is in the nature of art to conceal the means by which its results are achieved. It may even be that it is essential for the best of art not to examine how it is produced. Even Shakespeare, who has been valued for his capacity in this direction, left no recipe for how to reproduce his success in capturing the essence of conversational exchange. Indeed, his achievement itself is in the nature of a mystery since each reader of a play recruits their own experience to the interpretation of its meaning. Every great stage interpreter of Shakespeare's plays has in some way to construct and breathe life into a new conversation from the script which the playwright left as evidence of what he had in mind. It is perhaps the artists understanding of this re-creative necessity which is their most significant contribution to our understanding of the process of conversation.

The purpose and method of science is different. It is to create public, demonstrable knowledge of the topic being investigated. Sometimes this may appear tedious and makes for slow progress, but it has the inestimable advantage of enabling one scientist to build directly on the work of another. Gradually a coherent body of knowledge emerges. Despite what have appeared to be insuperable difficulties there are now signs that this is beginning to happen in the study of conversation.

This topic of investigation has emerged from a variety of disciplines including social psychology, linguistics, management studies, cybernetics, psycho-therapy and computer science. Each has made its own contribution by making its own approximations and simplifications. The psychology of skill is a useful explanatory paradigm within which to start.

Skilled people normally use well practised specialist methods or techniques to achieve their purposes in some well defined domain. The juggler, the footballer and the racing car driver could all be thought of as skilled. As in the study of all human activity, the systematic study of skill tends to have been pursued in at least two seemingly incompatible ways. Some investigators, knowing themselves to be skilled, tried to interrogate their own experience to discover how they did what they did. Others rejected personal experience as unsound evidence and sought to describe and explain skill solely on the basis of their observation and records of the behaviour of others.

The behavioural approach with its scientific requirement for reproducible observations tended to study the repetitive skills of manufacturing industry. This led in turn to the need to define agreed units of behaviour and to the early tendency to describe skilled behaviour as a linear sequence of behavioural units. Some of the most persistent attempts to develop at this type of description are to be found in the techniques of Work Study developed in the period between the 1930's and 1950's.

These linear descriptions were inadequate in two eventually obvious ways. Firstly any study of the rhythm and time structure of skilled behaviour revealed organisational properties which required more than a linear format. Different levels of description each required their own definitions of a behavioural unit. Gradually it became clear that even the simplest skilled behaviour was hierarchically organised. Each unit of behaviour at one level of description was itself a sequence of units in a more detailed description, whilst remaining merely one

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component within a larger organisational unit. Thus whilst the electronic printer may treat the printed page as a linear sequence of letters, spaces and punctuation characters; the linguist's analysis of language is hierarchical using phonemes, words, sentences, paragraphs and larger organisational forms to describe the skills of writing.

The other difficulty with describing a skilled performance as a linear sequence of behavioural units is that it is not too useful as an aid to learning the skill. Something is missing. Perception, the selective appreciation of relevant information is an essential part of any skilled performance. In the 1950's and 1960's descriptions began to include detailed information about how the senses were contributing to skilled performance. Skill was described as a perceptual-motor activity. Information was needed to trigger a behavioural unit, (e.g. when to pull the trigger of a gun). Different information was used to monitor and control the activity (e.g. balancing a stick on the end of your nose) and still further information was required to check its successful completion (e.g. recognising when an omelette is sufficiently cooked to be ready for serving). One version of this view of behaviour was expressed in 'Plans and the Organisation of Behaviour'.

Other operational attempts to communicate about skill are to be found among the specialist techniques of all types of craft and performance occupations. Ballet, boxing and building technology each have specialist ways of communicating the nature of a task or describing a performance. Most of these occupations have found that it is easier to understand what is going on if the skilled man explains what he is looking, listening, tasting, feeling or sniffing for, than it is just to be told that his eyes, ears, mouth, fingers or nose are moving at that point in his performance.

All descriptions of skill are eventually forced to add some reference to the perceptions, thoughts and feelings associated with the behaviour. They all return to some version of Milles, Galantes and Pribmm? plans and images. The return to the intentions and purpose of the skilled performers, to their understanding of tools and materials or to some other form of cognitive model; and to some evaluative system which sets personal standards and acts as the basis for defining criteria against which success or failure can be privately assessed.

Already (with its hierarchical structure and its need to describe the constructions of experience) our theory of skill has moved a long way from the linear sequence of behavioural units. The organisation of behaviour is seen to reflect the organisation of experience. The selectivity of perceptual set is seen to reflect the anticipatory nature of a model of reality which can be run faster than reality itself. Thus the skilled ball player has a model of the way in which tennis balls, footballs, baseballs or cricket balls move. This model 'automatically' enables him or her to anticipate the flight of the ball (i.e. to 'know' where it is going before it gets there).

For the computer buff the analogy is to the simulation or modelling program which has been constructed to reflect the reality of the specific situation or series of events it purports to represent. This model can be used to monitor the present reality and then run forwards in time to anticipate the future. This type of program is used in various forms and complexities of process control. The more sophisticated versions use various 'records of past experience' (i.e. the match and/or mismatch between their predictions and what actually happened) to improve their model of reality and thus their future performance.

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Such modelling facilities are at their best when the reality is man-made (e.g. a manufacturing process) and therefore fully known and easy to represent. They are less accurate but are rapidly improving in those 'predictions of nature' where the situation is already well monitored and described and where the scientist (at least in his role as scientist) assumes that there is no other intelligence intervening in the control of events. (e.g. in meteorologist's models of the weather, and in the astronomer's models of the heavens).

This 'computer model' analogy is useful in extending our theory of skill. The hierarchical organisation of behaviour can be seen as an over-simplification. It was a first approximation to the human computer model. (i.e. the cognitive model). The behaviour produced as the cognitive model drives the human organism in the context of a partly predictable environment reflects the organisation that might be represented as a program composed of a complex and variously tested set of routines and subroutines. From one perspective the cognitive model represents the relevant segment of reality, from another perspective it is the mechanism via which the skilled person carries out his or her intentions with respect to that reality. It is the means by which ideas are put into operation.

The computer analogy has proved exceptionally fruitful in offering the theory of skill existent and quite widely shared forms within which to grapple with the complexities of experiential organisation. Unfortunately, as is always the case, the analogy can be pushed too far. The computer programmer knows the computer language in. which he is working. Most of the people who study cognitive organisation have a scientific if not a behaviourist background. This has led them to believe that the cognitive model can best be described by the observer of the behaviour who then formulates a view of the model which could or might result in that behaviour. The skilled persons cognitive structure is described in the language of the skills analyst. This is the prevailing error in most of the attempts to systematically examine skill in this way. It is a hangover from the behavioural era.

The assumption is made that even when experiences differ they can still be described within one shared descriptive system. This assumption is reinforced by those professions which spend years systematically practising the sharing of certain experiences/behaviours (e.g. ballet, boxing and building technology) whilst imposing a specialist descriptive language upon its proponents. This view of experience as having the same dimensions within everybody, (who then differ in terms of where they lie along each dimension) is the next major hurdle to be traversed in our search for an adequate theory of skill.

Psycho-therapy has also been faced with this same issue. Freud gave a giant impetus to our understanding of mental illness by developing a language in which to explore the experience with his patients. The psycho-analyst believed that the experiential organisation of their patient was always best understood when formulated in the 'id, ego, super ego' etc. language of psycho-analysis. Psycho-therapists are now moving away from this type of constraint as more and more evidence accrues to demonstrate the inadequacy of each and every attempt to develop one universal descriptive language of human experience.

Gradually as these lessons have been absorbed many psycho-therapists came to the conclusion that each person can only properly explore and reflect upon their own experience if they do so in their own terms.

Having explored alternate languages for describing the psyche of others, more and more of them are turning to the client for the forms in which the clients psychic organisation is best

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represented. In parody this is like the computer programmer at last asking what operating system assemblers and compilers are loaded in her or his machine before attempting to converse with it. But that really is a parody since psycho-therapists have no reason to believe that the clients language is one already known to them.

Carl Rogers solution to this dilemma was 'client-centred therapy' in which the therapists reflect back the language of the client to the client until they learn to re-program themselves. Again Carl Rogers was perhaps the most extreme advocate of this view, refusing to offer his clients anything but their own words as a resource for describing their own experience. George Kelly also took a similar view. He suggested that each person has their own set of personal constructs (dimensions of experience) out of which they attribute meaning to events. He developed a technique, the repertory grid, which can be used to make the language of the client explicit. Kelly decided that each of us had unique personal experience, that we search after meaning and develop constructions of experience which are viable for us in our own times and places. In Kelly's scheme we each develop our own repertoire of personal constructs which serves as a resource out of which we construct our experience and thus attribute meaning to events. He further believed that these constructions serve to anticipate future events and our construing of the consequences of our constructions of meaning validate or invalidate them, allowing us to develop or revise them the better to achieve our purposes. Kelly's theory of personal constructs is in many ways similar to our theory of skill. The difference is however crucially important. For Kelly the way to understand a persons behaviour was to so fully enter into his or her construct system, to so fully enter into his or her system of personal meanings that the behaviour was then merely a natural exteriorisation of the clients way of looking at things. The last step in developing our theory of skill is to recognise that the only adequate form in which to represent the experiential organisation of skilled people is the forms in which they each construct their own experience.

SKILL AND THE FULLY FUNCTIONING PERSON

The word skill has become somewhat debased in it's professional psychological usage. The craftsman, the scientist and the artist are all seen as more than skilled. The capacity to express oneself with unusual competence, whether on the football field, as a carpenter or as a sculptor is thought to involve more than skill. Here the argument is that the personal 'skills' of the behaviourist have gradually pre-empted the professional usage of the word 'skill'; this is because the severe limitations of their 'model of man' has restricted their most productive work to the study of relatively uncomplicated skills. This is artificial in two ways. On the one hand their personal models of skilled activity have produced a selective perception which is blind to the creative 'problem identification' and 'problem solving' activity implicit in even the more repetitive of skills (e.g. the person with a 'knack' is usefully construed as someone that has identified and solved a series of inter-related problems which most other exponents have never conceived).

On the other hand complex activities such as painting, gardening or inventing the theory of relativity are either reduced to absurdity by a 'do it by numbers' approach (including some descriptions of 'the scientific method') or they are placed outside the useful span of the word 'skill'.

An implicit purpose of this paper is to suggest that skill, competence and creativity may be seen as a continuum which would be better understood if it were partitioned in other ways. Here it is argued that a more adequate theory of skill, competence and creativity must be

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constructed from both behavioural and experiential evidence. This allows a more complete description. It accepts that the individuals conception of the seemingly relevant reality is a crucial a component in explaining the structure, timing and synchronisation of her or his behaviour. But it also recognises that their reflections upon an analysis of their behaviour essential to a proper understanding of their constructions of experience (e.g. their perceptual selectivity and their ability to anticipate).

George Kelly has suggested that each of us is our own 'personal scientist' constructing our personal realities from replications of our experience. He suggests that we are constructing our own theories of reality from the raw materials of our experience, that we act (behave) on the basis of these theories refining, validating or invalidating them until we achieve sufficient understanding to meet our needs and achieve our purposes. In this view perception is merely one function of the construing system and behaviour is another. Neither is comprehensible apart from the whole. The hierarchical description of behaviour proves useful in so far as it is compatible with the hierarchical structure of the personal construct system as this is expressed in the cognitive and sensory-motor structures of the body.

This leads to the (currently) final component of this outline 'theory' of skill, competence and creativity. Most theories of skill are framed largely in terms of task analysis. They are constructed from the point of view of the job to be done. Conversation with almost any effective on-the-job practitioner in 'the art of helping others to acquire skill' will contain much that contemporary psychology would partition off under headings such as personality, motivation or the emotions. Any theory should offer some explanatory system which includes the whole person in relation to the task. Reactions as well as reaction times are relevant. The creative foundry moulder and the skilled composer of music both accept themselves as part of the system which is the task-being-done. Rogers expresses this as the fully functioning person having increasing trust in his (or her) own organism.

The computer scientist would talk about the hardware and firmware of the system as well as the software. Konrad Lorenz expresses his view of 'life as a process of learning' in part with the following words "the physiological mechanism whose function it is to understand the real world is no less real than the world itself". Michael Polanyi talks of the 'tacit knowing' of the scientist as a function of the whole person. Thus the cognitive model of reality on which skill is based should include a relevant model of self as well as a model of the task in the work situation. To the extent that a persons cognitive model fails to anticipate their own reactions to doing the task it will fail to incorporate them into the experience of the task-being-done. The resulting is a failure to synchronise the pattern of internal reactions with the structure of the external activity: and less than fully skilled performance will result. This is equally true for the soldier under fire, the primary school teacher with a 'difficult' child, or the carpenter with a 'feel' for his tools and materials.

CONVERSATION AS A SKILL

The behaviourists' studies of the laboratory rat were based on a 'model of learning' which always pre-supposed that learning was doing the task as it was defined by the experimenter i.e. learning meant running a maze, discriminating shapes or pushing a lever at the 'right' time etc. Ethologists studying animals in their natural habitat watched learning happen for needs and purposes that arose out of the animals themselves. Theories of social skill vary as widely as theories of animal learning. The encounter group, behaviour modification and T.A.

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(transactional analysis) each embody theories or models of 'other people'. Each model produces a different model of social skill.

In attempting to apply our theory of skill, competence and creativity to the processes of conversation we are faced with a peculiar dilemma. In conversation the referents of the model of relevant external reality may be construed as entities which are modelling other conversants whilst they are modelling them. For purposes of first order explanation only, it may be useful to think of three types of participant in a conversation. The 'type A' conversational participant models other peoples, often very elaborately, but allows little or no room in their models for the possibility that the other is modelling them. Conversational participants 'type B' model the other as having a fixed or fully established model of them. Whereas participants type C model the other as actively modelling them.

Type A, as psychologists, will tend to treat the other as object. Type B will tend to produce a psychology of individual differences and Type C will tend to produce a humanistic psychology.

But within each type the nature of the model of the other can vary considerably. Hence some of the complexities of conversation. Here it is neither relevant nor feasible to expand on these possibilities, although the reader might like to contemplate how people modelling others through various popular (or unpopular) theories of man would (or do) converse about learning.

Here we will focus on two components of this modelling.

1. The teacher's and the learner's model of the learner

2. The teacher's and the learner's model of the conversational process.

PERSONAL MYTHS AND THE UNDERSTANDING OF LEARNING

The learner will always have some assumptions, prejudices and/or understanding of his or her own learning. Such personal models may be formulated

(i) as convictions about capacities or incapacities for learning of different subject matters e.g. 'I have no musical talent', 'I am no good at mathematics' or 'I am good with people' etc.

(ii) as convictions about the best personal conditions for learning e.g. 'I like background music' (or complete quiet), 'I can only work for 20 or 30 minutes at a time as I have to have 3 or 4 hours before I can settle down to studying', 'I have to be in a relaxed position when I read' (or 'I have to sit at a desk if I want to concentrate') etc.

(iii) as convictions about the optimal processes for learning e.g. 'I have to write it out to remember it', 'I learn best by talking with other people' etc.

Most people have arrived at these convictions about their own learning, the models of themselves as learners on less than adequate evidence. They have either been convinced by somebody else's assessments of them e.g. parents or teacher's: or they have been offered less

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than optimal opportunities to learn and have generalised the experience as a commentary on their own methods. Such assumptions can very easily become self-fulfilling.

The teacher also develops assumptions, prejudices and understandings about the nature of learning. Sometimes teachers have one set of models for the learning in their students and another for learning in themselves. Teacher may operate type A, B, or C models of their students. They will also have convictions about each students

(i) capacity for learning certain subject matter,

(ii) the best conditions for learning and

(iii) the processes for learning.

Together the teachers models of the learner and the learner's model of themselves create a conversational frame which largely defines the quality and amount of learning that they will achieve.

MODELS OF THE CONVERSATIONAL PROCESS

In additional to beliefs about learning, teachers and learners have assumptions, prejudices and understanding of the process of the teaching/learning conversation.

One difference between people's approaches to learning is about awareness and the freedom to negotiate. There are those teaching/learning situations in which the nature of the conversation is assumed but not discussed. These are those in which the method is made explicit but not negotiable, and there are those organised learning events in which the nature of the teaching/learning process is itself a subject for negotiation.

Although there is not space here to elaborate upon the wide range of personal myths and assumptions which exist, it will be obvious that there is great variety and flexibility in the scope and nature of the models which individuals may bring to the teaching/learning situation. Many seemingly valid models are demonstrably merely self-validating. What is needed is some meta-theory of learning conversations which simultaneously offers sufficient agreed structure within which to construct the learning/teaching event whilst maintaining the freedom to discuss and negotiate the nature of the personal models which both limit and enable learning. The remainder of this paper attempts to outline one such model of a 'learning conversation'.

The Need for a taxonomy of Learning Conversations?

Most people are disabled learners, but, having now agreed referents, they do not know how slowly and badly they learn. Believing their capacity for learning to be inborn (e.g. a matter of intelligence and personality) they make no attempt to increase it.

- Even senior managers and professional specialists differ in their capacity to learn from experience.

- Manual skills have a reputation for being difficult to acquire.

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- Not everybody who goes on a training course will extract the same benefits from it.

- The skills of identifying and solving significant and relevant problems within a realistic time span are not as widespread or fully developed as many would wish.

- Technical experts sometimes have difficulty in learning to manage people.

- All of us have some learning disabilities. Most of us have many.

The universality of inhibited or undeveloped learning capacity goes unrecognised only because so many of our peers are equally disabled. Expectations are low. The occasional exception is classified as a maverick or a high flier. This does nothing to change the general level of expectation,:- of what can be learned, by whom, how thoroughly and how quickly. At school, in further education, at university and at work the problem of 'improving learning' is generally misconstrued. The usual response to a lack of success in organised learning is that teachers and trainers attempt to improve the methods of instruction or to simplify the instructional materials. The usual response to a lack of success in learning on the job is for the manager to raise the selection standards or to send the learner on a course. These methods for tackling the difficulties which people experience in acquiring new attitudes, skills and knowledge can, and often do, cope rather cumbersomely with the immediate problem. They would not continue to be used if they did not. But they do nothing to increase the disabled learners capacity to learn more effectively in the future. By placing the primary responsibility for what gets learned with the trainer (or the designer of training materials) this approach leaves the learner more dependant on good instruction. Indeed, effective instruction can, by artificially simplifying the learning task, have the unnoticed side-effect of leaving the learner more vulnerable and unable to cope creatively with the challenges in his or her less protected future.

There is another approach. The disabled learner can learn-how-to-learn. This is very different from being trained-how-to-be-trained or being taught-how-to-be-taught.

The theory and practice of Learning Conversations has been developed over the last fifteen years within a sustained attempt to study human learning in its many natural habitats. The effort has been made to look at learning from the learners point of view. This has enabled the author and his colleagues in the C.S.H.L. to develop a systematic methodology for helping people to increase their capacity for learning. The speed and extent of this increase is often quite startling to both participants. Follow-up studies over two years show that the change is sustained and is therefore probably permanent. A wide variety of projects in education, industry, commerce and government agencies has resulted in the development of an effective technology for reflective learning. This technology adds selective power to the various phases and stages of the Learning Conversation.

What is a Learning Conversation?

Whilst the occasional lucky learner may unconsciously hit upon some successful strategies for learning, disabled learners only become more fully functioning as they are enabled to reflect upon their own learning activities. Through the Learning Conversation they become able to recognise, represent and thus control their own processes. They become more self-organised. In any effective conversation, control is passed back and forth among participants as they recognise the nature of what each has to contribute. But all participants are not equal.

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Most conversations are asymmetric. In the early stages of the Learning Conversation the learner provides the evidence on which the collaborative research into the nature of her or his learning is based. The manager of the conversation guides and controls the discussion and exploration of it. As the learner's awareness of their own processes increases the manager of the learning hands over control of these awareness-raising activities to them. He or she then begins to encourage learners to challenge their personal myths about their own learning capacity. The learners are encouraged to change the emphasis of their attention. The Learning Conversation moves into the next phase. They begin to explore how the learning can be improved. The manager encourages them to explore alternative models of their own processes and to develop and test in action, personally acceptable theories about how they can learn more effectively. Gradually the manager also hands over control of this exploratory activity to the learner until eventually only the quality of the learner's personal investigation remains under the manager's guidance. The total conversation is phased to enable the learners to obtain insights which allow them to conduct more and more of the conversation for themselves. The ability to conduct most of a learning conversation with yourself is the essence of 'how to learn'.

The process of a conversation can be distinguished and described separately from its content. In any job or topic area, learning needs and purposes can be clarified and agreed, tactics and strategies can be discussed and monitored, and criteria for judging the quality of outcomes can be constructed and applied. The conditions for creative conversations require that the content of an exchange is modulated according to a shared understanding of how the conversation will be conducted and that this model of the process itself remain negotiable. Such conversation is rare. People value it when it does occur, but they can rarely create the conditions to make it happen. Each of us can identify our own special events in which we had this rare experience. It can be recognised by the experience of constructing, exchanging and negotiating personally relevant and viable meaning. Such experiences have been defined by Maslow as those in which the criteria for appreciating them can only arise out of the experience itself. They are both self-referent and self-assessed. People may achieve such creative conversation within themselves. This is the focus of self-organised learning.

The Science of Learning Conversation is the study of the conditions in which such experiences are propagated and grow. The C.S.H.L. reflective learning technology attempts to create such conditions and thus increase the probability of creative personal learning.

The creation of such experiences demands a different approach from that of instruction. The final arbiter of the effectiveness of learning is always the learner himself or herself. To be truly conversational, the technology of learning must allow relevance and viability to be assessed by the learner. The criteria and referents used by the learner may be challenged and renegotiated but they cannot be ignored, denied or arbitrarily over-ridden without destroying the sources of self-confidence and self-sustaining effort. The Learning Conversation encourages and enables the growth of this capacity for self-organisation.

> In its Tutorial mode it leads the learner to the formulation of a personal learning contract in terms of Purpose, Strategy and anticipated Outcome. After an attempt has been made to carry out the contract the Review leads the learners to reflect upon their learning competence. Poor learning performance may come about in two very different ways. Learners may have wanted to achieve the contract and yet not have had the skills and competencies necessary to formulate and execute the contract effectively.

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The Learning-to-Learn mode of the Learning Conversation leads them into a self-diagnosis of their learning strengths and weaknesses and into conversational activities designed to help them achieve greater capacity for learning.
Poor performance resulting from lack of interest leads into the Relevance conversation mode. Here the learner is asked to identify long-term needs and purposes and to differentiate these into shorter term recognition of the relevance or inappropriateness of the current learning contract. It is this part of the conversation which can save days, months or even years of alienation, misery and misspent effort. The Relevance conversation can identify the personal structure of a topic or a job situation and thus help learners chart their own paths to involvement in it.

Choice of specific techniques to be recruited into the Learning Conversation depends upon the nature of the application. Learning Skills, learning situations and topics to be learned may all require special techniques for awareness-raising.

Challenging the Robot

Achieving new levels in learning performance usually involves serious personal change. It involves the disruption and breaking of existing skills and the establishment of new attitudes and personally strange ways of thinking, feeling and behaving. Many of the special techniques used in the Learning Conversation have been specially recruited and developed for such controlled interventions. But however carefully the conversation is developed the process of significant 'learning-to-learn' will always involve a "feeling trough" in which anxiety and feelings of inadequacy combine to push the person.

We have found it useful to talk of each learner as having a set of personal learning robots - the learning-by-reading robot; the learning-by-discussion robot; the learning-by doing robot; the learning-by-listening robot etc. Each of us has been so habituated in our own ways that we are completely unaware that each of these modes of learning is itself a learned skill. Each learning skill has become so automatic that it is no longer under conscious control. Special techniques are required to challenge the robot, bringing the skill back into awareness and thus available for revision and development. But the disruption of existing skills produces a drop in effective performance. The learner feels that he is getting nowhere and becomes frustrated and anxious. Part of every learning conversation is concerned with offering the learner support through this learning trough.

The Need for Three Related Dialogues

The change conversation can be seen to contain three entwining dialogues. The first dialogue serves the purpose of raising awareness of the learning process. The second dialogue offers personal support to the learner, particularly when he is experimenting with new methods of learning and feels vulnerable after having abandoned his habitually safe techniques. The third dialogue helps the learner to identify standards: in himself, in other people, and in the situation, which can serve as referents for the quality of the learning which he is attempting to achieve.

The first 'process' dialogue taps unconscious habits and helps the student to become aware of his own learning style. In most areas of activity, for example in manual skills, social skills, reading skills and management skills, people have little or no understanding of their own learning processes. Records of learning behaviour can be used to talk the learner back

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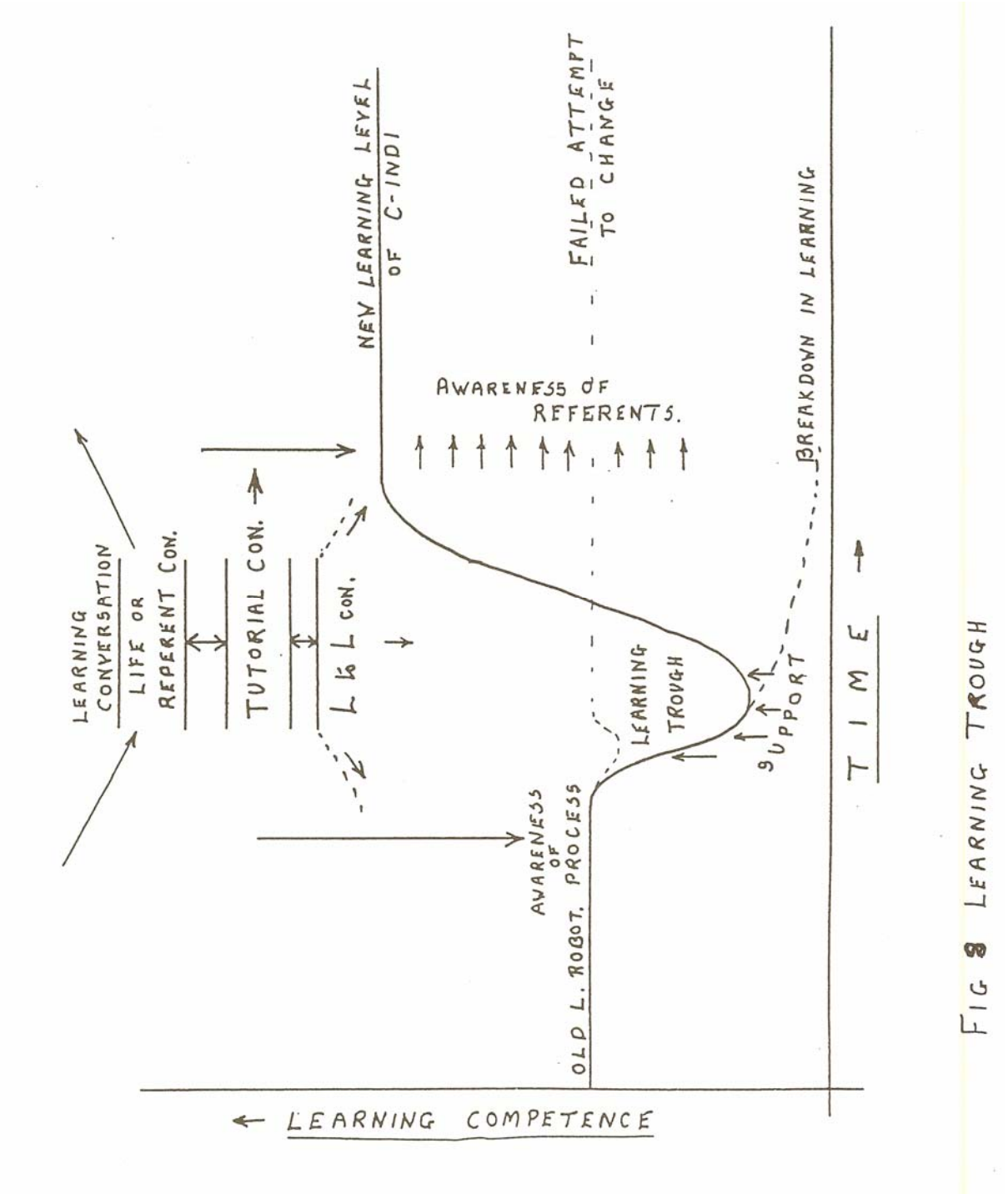

FIG 8 LEARNING TROUGH

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through his experience. These can be as elaborate or as informal as the situation demands. Careful reconstruction of the experience serves to raise awareness on subsequent occasions. Gradually a personal language for describing learning develops. We have found that the Kelly Repertory Grid can serve as an awareness raising device for many different tasks from interviewing to industrial inspection, in which perception, judgement, thought and feeling are of central importance.

The second dialogue 'supports' the learner through this process of change. It is as yet largely a matter of sensitivity and intuitive understanding on the part of the manager of learning. However the work of Carl Rogers and B. F. Skinner together, offer some indicators of the ways in which this personal support should be offered. Rogers' technique is to create a very attentive but relaxed and accepting atmosphere in which there is no evaluative comment. His studies show that this frees individuals to experiment and explore their own processes in ways that are normally too threatening for them to attempt alone. Skinner's behavioural reinforcement techniques enable a person to define new patterns of behaviour which they can then be carefully guided into achieving. Some the the 'precision teaching' techniques in which learners observe themselves and provide their own systematic reinforcement seem to be bridging the gap between experiential and behavioural techniques. These two seemingly disparate approaches can be variously adapted and combined to produce a powerful range of methodologies by which the individual can be freed, supported and guided into new ways of behaving. But teachers must explore their own resources and develop those 'mixes' of methods which are most effective in enabling them to support change in others.

The third 'referent' dialogue aims to enable learners to appraise their own performance, but to do so they need to identify examples or referents which they can use as a basis for comparison. The manager helps the learners to identify such examples either in outstanding performers of the skill which they wish to acquire or as measures of quality and/or speed which they can apply to their own activities. Whatever examples learners identify in their own environments they must remain free to use them for their own purposes. In the end, the learner comes to use his or her own previous performances as the basis for evaluating their improvement and should be encouraged not to restrict themselves to the existing norms nor to be discouraged by the outstanding performance of more experienced people.

The Management of Learning

By offering a framework within which the modes of teaching/learning conversation depicted in Figures 4,5,6 and 7 can be sustained a theory of learning conversations may enable more teachers and trainers to expand their range of teaching skills.

If we are to encourage people to learn from experience, to think about their needs and purposes, to plan their strategies, to evaluate their success, and to review, revise and improve their methods of learning, then inevitably we are emphasising self-organisation. Self-organised learners expect to go on learning, to make independent judgements and to question. This makes them potentially more useful and productive. Everyone can learn to adapt and develop. This depends on the recruitment of procedures which facilitate personal growth.

In our view an emphasis on the 'process' of learning rather than the 'products' of learning enables the development of a 'language' for negotiating changes in learning capacity. This language is itself content-free and once acquired enables individuals, often for the first time, to take control of the ways they learn from experience. In the crisis-ridden conditions which

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prevail in much of contemporary society, where 'the valued learning products' of today can easily become the chains restricting tomorrow's growth. The development of a language which enables a way of thinking about personal learning processes becomes an important selective factor in the struggle for personal and industrial survival.

The special tools for challenging the robot contribute to the development of this language in which these dialogues can be conducted. The dialogues signpost separate roles for the manager of learning as an agent for change. People do not necessarily learn from experience, it depends on the meaning they attribute to their experience and on their capacity to reflect and review it. Much organised learning has tended to disable us as learners and the onus is clearly on teachers and trainers alike to provide a context within which learning conversations can be nourished and sustained.

The 'learning-to-learn conversation' is primarily concerned with skills by which personal understanding is achieved and personally defined task performance is improved. The detailed interaction by which habits can be broken, reviewed and rebuilt, becomes the focus of attention. The 'tutorial conversation' on the other hand is more concerned with the long term strategic aspects of learning; the planning of goals and the execution of purposes over a period of days, weeks, months or even years. It depends upon the establishment of explicit learning contracts where the content of the learning is negotiated, the needs articulated into specific purposes, the resources identified and the strategies put into action. The deployment of basic learning skills forms part of the conversation. It can also question when a learner should spend time in raising his level of competence in any one skill. It is when such decisions are made that the 'tutorial' phase refers back to the 'learning-to-learn' phase.

Questions about what is being learnt are raised in the 'Relevance conversation'. In courses this deals with issues of self-development and with the learners perception of how the topic of the course relates to his role, job and tasks.

The emphasis on self-organisation and the practice of Learning Conversations has serious implications. Who are to be the managers of learning? Is it the training or personnel department's job? Is it the job of every manager to see that his department becomes a more effective learning system? Managers of learning can play a key role in any organisation. They can become the catalysts for change at all levels in the company. Such managers will need guidance in their own development and will also need encouragement and assistance in providing an organisational context for all participants to grow and change. To act as 'managers of learning', people will require new skills, sensitivity, a wide knowledge of learning methods and considerable resources, and above all, they will need to be self-organised learners themselves. Industrial and commercial organisations must meet the challenge involved in enabling staff to adapt themselves to the changing scene. For an organisation to achieve creative growth and change it must work as a system of corporate, self-organised learners. Some of the techniques and philosophy described in this paper can be recruited to achieve this. A fully participative corpus, made up of supporting self-organised groups is feasible. To meet the demands of today's society and the challenges of the micro-processor revolution which is almost on us, the trajectory to growth must involve the management of people as self-organised learners and fully-functioning beings. Only by moving into this unexplored terrain can industrial society survive and grow.

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Details of the following are available on request from C.S.H.L.:-

Courses on Learning-to-Learn,
Publications,
Technical Papers,
Learning Materials and Kits,
Micro-Computer Programs:
Repertory Grid Suite;
Reflective Learning Suite,

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FOOTNOTE:
The C.S.H.L. Publications 1961-1982 includes over 100 technical papers describing the research projects, techniques and theory of Learning Conversations. These are available directly from the Centre.