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**Teacher learning and the teaching of teachers**

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Learning for change

Schools are necessarily caught up in social change. Recently the demands on schools to change have increased and in some quarters much is said about the need to bring about urgent 'reform' of public education, so that schools can develop procedures and practices that will enable graduates to respond effectively to the challenges presented by social and economic change. As the Australian nation is moved by government into the mainstream of the global economy and as schools are moved by governments into the competitive market, students and their teachers are being called upon to develop new perspectives and practices that will allow them to thrive in these rapidly changing conditions.

Some pressure for reform is perhaps a permanent feature of education, since education involves growth. It is not so much the pressure for reform that is noteworthy from time to time, but the urgency of the call and its manifestations. In the US, there have been regular calls for urgent reform of schools over the past four decades, where the urgency is sometimes hidden in the title of the report of the task force, such as in *A Nation at Risk!* There is currently a further movement for reform of American schools (Lieberman, 1995).

In Australia our task forces have been fewer in number and the report titles have been less evocative. But the pressures on schools to work at helping to solve wider social problems has been increasing steadily across the same period. The rise of a new social problem is often associated with a call that "schools should do something about it", so that a claim comes to be made on curriculum space that will help to reduce the impact of the emerging problem. Literacy and vocational training(VET) provide examples of areas where urgent responses are currently being called for. Although literacy has been a popular problem for schools across recent decades it has recently become an urgent problem as the results of large scale testing have given it new prominence. For the Federal minister responsible for schools there is a need to reform the methods of teaching, to move away from what were perceived to be unsuccessful, 'new fangled' methods. This solution, and the analysis upon which it depends, seems deliberately simplistic (see Luke, 1997)

Unemployment has been constructed by some quite powerful groups, like the federal government, as a problem that can, at least in part, be addressed by making a claim on curriculum space. This construction of the problem is likely to prove fallacious, as the availability of paid employment continues to decrease, so that the actions of schools, even if they had maximal effect, can only be expected to have a weak impact on the scale of the problem. Even so, schools are called upon to mount an urgent response and, because they are in a competitive market, non-response is dangerous. VET is once more in the vocabulary of secondary school teachers because explicit vocational training in schools is seen as an effective way to address the unemployment problem.

The reality of literacy and employment problems is not being called into question here. While these are good examples of the current 'urgent' problems with which schools are being confronted by governments, they are real problems. They are, however, only the more spectacular of the problems that continually face teachers and educational systems. There are always less spectacular, though no less important, problems for teachers to address, such as how to assist students to be successful learners and responsible citizens. What is of interest here is how governments, educational systems and schools/teachers understand the processes that might engender change in response to these problems.

## Change from the top

The patterns of interaction of these three bodies - government, educational system and teachers - in bringing about change presents an interesting problem for analysis. One pattern, popular with governments, is that governments set broad policy directions and seek to have systems and schools respond in orienting themselves to these directions. The means employed by governments to speed up the change process are usually not subtle. The crudest response of government is to mandate change. Analysis of this top down pattern of change generation in the US suggests that it is sometimes less successful than government policy makers might like to believe. The work done by McLaughlin(1987) on policy implementation in the US suggested that mandated change does not always occur. Fullan (1994) has also argued that such mandates have an unimpressive record in bringing about school improvement. In an earlier discussion of change forces Fullan (1993: 138) described the pursuit of planned change as "a mug's game"

A slightly more subtle approach involves use of the funds attractor mechanism. In Australia the federal government uses targeted funds to engender change in both the state systems that are responsible for educational provision and in schools. The federal government seems to have a permanent pool of funds for this purpose. Every so often they change the target and the title on the top of the application forms! . Educational systems must respond to this by attempting to attract a portion of these funds and so must engage directly with the government reform agendas. In recent years the Key Competencies project has

provided an example where a federal policy initiative has directed energy and activity in state systems through use of the funds attractor. At least in South Australia we see the beginnings of an impact on schools of this initiative being manifested in plans for 1998 (Department of Education and Children's Services, 1997).

#### Change from within

There is, of course, an alternative source of change within a school, a source of change that is crucial for the health of the education system. Indeed in other reports on this Teacher Learning Project (TLP) in this symposium we have shown how schools have developed creative and effective ways of responding creatively to external mandates by appropriating the reform agenda in ways that are compatible with their own educational agendas. However, the potential for bringing about widespread change in a large number of schools is severely limited if it restricted to use of these externally imposed mandates and fund attractors. On their own, these attractors do not seem to have the same power to induce the exponential change attributed to the "strange attractors" of chaos theory. As McLaughlin (1987) argues any of these top down initiatives depend on 'local capacity' and 'local will', and on the acceptance at the local level of the message at the centre of the initiative. Other powerful change generators are available and many of these reside within the school. The challenge for schools, and for educational systems, is to recognise and understand the nature of school-based change generators and to work out how these can be supported and maintained.

In the wider Teachers' Learning Project we have attempted to identify the nature of some of these local change generators that enable schools to change and "move on" to develop more collaborative and critical responses to their situations in order to improve the quality of student learning. In previous papers in this symposium we have described the part played by development of a coherent vision for the school, by educative and distributed leadership, by data gathering, by involvement with the community and by the creation of discussion spaces for working on issues and tensions. The impact of these in the schools involved in the project has been described in larger reports on the case studies. These reports attest to the reform that has taken place within the schools and document how this change has been facilitated by the procedures developed by teachers and administrators. Here is a (if not the) major set of change generators for an educational system, the internally developed procedures and practices that will enable schools to move on toward more powerful education for students.

How do teachers change their understanding of their teaching situations? In this report we focus attention on what Fullan (1993) refers to as a core capacity for change - the specific learning actions and dispositions of teachers involved in generating change. Because we accept that it is teachers and school leaders who provide the local capacity and local will that drive change we argue that it necessary to consider both the nature of learning being undertaken by these groups and the ways in which this learning is facilitated by schools and

systems. For some it is surprising that the learning of teachers, and the teaching of teachers, should be the object of study. Yet it is teachers and leaders who shoulder the responsibility for student learning. Just as we seek to understand and improve the learning and teaching of students it is important to understand and improve the learning and teaching of those who accept responsibility for students. Examination of these specific processes, and of how they are supported within a school, indicates that there is a need for schools , systems and outside experts concerned with professional development to re-evaluate the importance of informal teacher learning.

#### Teacher learning activities

Teachers learn quite a lot during the course of their teaching and it is important to understand where and how this learning is occurring, to consider the sites and formats of that learning. To illustrate this we will draw on observations made in a case study of one of our project schools where senior secondary teachers were heavily involved in distance education of Year 11 and 12 students in a whole range of different locations, from home to jail.

Table 1. Activities involving teacher learning

#### Locus of direction



## Process

Type of activity

Professional reading

Reading of research

Reading/reflection

Reading of policy

Reflection

Individual



Observation

Observation

Visiting

Planning

Solo action

Teaching

Practice



Team teaching

Role playing

Participation

Joint planning

'Show me now'

Action research



Modelling

Collegial

Networking

Performance management

Conversation

Mentoring

Committee work

Learning teams

## Lectures

'Experts'

Listening

Demonstrations

Formal study

This school was included in the project because use of the distance education mode required significant learning on the part of teachers.

When teaching at this school both experienced teachers and novices had to learn new sets of administrative procedures, new ways of teaching and relating to students who were in a 'virtual' classroom, ways of teaching in a space that was almost always inhabited by four or five other teachers, and ways of teaching in a mode which resulted in significant intensification of their work.

Our observations of teaching and discussions with teachers in this school identified a range of the different activities that were sites for teacher learning. We have listed these in the right hand column of Table 1. The quite long list in that column indicates the variety of opportunities there are for teacher learning within this school. As is indicated in the other columns of Table 1 these activities can be differentiated on the basis of the processes involved in the activity and the source of direction for the activity. Some are generated and directed by the individual teacher, some through collegial activity, while other activities are directed by other people, quite commonly outside experts. Our focus here is, however on the recognition of these activities as instances of teacher learning.

#### Formal and informal learning

Many of the activities listed in Table 1 are carried out as part of the formal training and development activities of the school. These are resourced and delivered through formally scheduled induction sessions, school closure days, staff meetings, committee work, performance management activity, and reports generated by working parties and the leadership team. These activities explicitly provide spaces and structures for key components of the learning that teachers need to undertake in order to operate effectively in their teaching environment. They are formally established and get onto the teachers' learning agenda through the organisational structures of the school and

the education system. The activities cover a wide range of topics and many are concerned with the details of the teaching/learning interactions with students that occupy most of every teachers' working day.

There is, however, a second category of these activities that are not formally organised. These activities may also not be recognised as instances of teacher learning and are typically not resourced in budget planning. These informal teacher learning activities comprise the larger grouping in Table 1. The individual activities, networking, conversations, the "show me now" sessions, the observations and so on, are different in character to the more formal learning activities. These unstructured forms of learning are so closely woven into the fabric of teachers' work and lives so as to appear almost invisible to an outside observer, perhaps even to the teachers themselves.

In contrast to the formally organised Training and Development programs described above, much of this informal learning is inseparable from the daily routines and teaching practices that characterise the work of teachers. This informal learning is different from much formal learning in that:

It is focussed on ordinary events

It arises from, and is embedded in the everyday demands of teachers' lives. It may not be recognised as learning because it arises from and mostly occurs on-the-job. One experienced teacher commented on the change in her questioning techniques across time:

I suppose it's hard to answer how that happens. I think it's evolutionary. I mean how I probably questioned students...I expect is very different to what I do now and its hard to think, really think back and answer objectively from that time.

It is often not recognised as learning

It's amazing how much we've got built in us that comes out when you're faced with situations. I guess that you do the same in a classroom when you come to think of it. If a student has special needs in a classroom, you do deal with them differently, to modify their curriculum, you give them simpler tasks or parts of tasks to do, you don't put them on to the extension work...you just try and think ways.

It is a response to an immediate need

I set that up myself, got one of the computer people, had some time on a Friday, and said, 'Sit down with me and take me through the steps'.

It is rapidly executed

In cases such as that just noted, the urgency of the need to learn what is typically a new procedure distracts attention away from the fact that learning is taking place.

A colleague, or non-expert, is the teacher

In much informal learning it is most likely that it will be a

colleague, or significant other, who does the teaching. This also contributes to the ordinary status accorded to the learning for this is not seen to be a special event being presented by an 'expert' outsider. The teacher may well be a student and in this school, for both teachers and for members of the leadership team, was often a colleague who had previously occupied the position.

Everyone's writing letters of introduction and I thought, oh god, I've got to learn letters of introduction, I've got to learn how to do this, so I just asked somebody and after one day they sat down and showed me how to set up just the basics and I say down and I did it and I got frustrated and I'd say 'Oh, got stuck', that sort of thing and then there was a lap top here and I took it home and my son, 'How do you do this? How do you do that?' And when I had to do the application I learnt a lot then, it was slow, but I learnt a lot.

There was this laptop here and I took it home and (asked) my son, 'How do you do this ?' And when I had to do the application I learnt a lot then, it was slow, but I learnt a lot'

It is initiated by the learner

In the excerpts quoted here we see in each instance that the initiator of the learning is the teacher. The goal is the established by the teacher and the teaching is initiated in order to achieve that goal.

It may be incidental learning

The important role of informal learning in the development of teachers'

expertise is reinforced by discussions of the way that such learning often occurs within the context of other, formal Training and Development events. One teacher noted that DECS conferences for teachers were important, not only for what might emerge from the official program, but for the opportunities they offered for informal learning:

I really like going to conferences and getting some information, hearing how other teachers have done things and then having the chance to sit down ... and say, 'Well when this sort of thing happens, what did you do?' I like learning that way because it's practical.

Why is this informal learning of interest?

We can identify five reasons why we should give more attention to this informal learning. First the discussions with teachers in this Teachers' learning Project indicates that it widespread. The conversations of teachers are liberally interspersed with anecdotes providing details of such learning. The frequency of talk of formal learning activities is much lower. As with teachers, managers in this school also reported relying to a considerable extent on their predecessors for knowledge of what to do and how it might be done, especially during the early part of their appointments. Formal management training did not support this necessary learning..

A second reason for our concern with this learning is that its

ordinariness gives it a very low profile. We have argued above that it results in the construction of knowledge by teachers that they are often unaware of.

Further examination of this learning is also justified because the activities that generate it appear to be ones that are preferred by teachers as forms of professional development. In a recent survey of teachers in Queensland (Queensland Board of Teacher Registration, 1997) respondents were asked to rate a number of different forms of professional development in terms of their value and desirability.

From the excerpt taken from the report included below, included in Table 2, it can be seen that activities such as networking, visits, and collaborative teaching and learning activities are rated highly on both counts.

Table 2. Preferred forms of professional development activities.

Professional development formats

Value:

%

respondents with high ratings

Preference:

%

respondents with high ratings

Highest rankings

Networking/interacting with colleagues

82 (top ranking)

43

Seminars/workshops

81

45 (top ranking)

Short courses

72

38

Visits/travel/exchanges

72

41

School-based collaborative teaching/learning activities

64

30

Lowest rankings

Guest lectures/public addresses

39

22

Action research

34

14

Lectures

23

16

Colloquiums/forums/symposiums

22

16

Preparation of academic papers

17

9

Adapted from the professional development rating survey from Making your professional development count, (Queensland Board of Teacher Registration, 1997).

The fourth issue associated with informal teacher learning is about the extent to which it are resourced within schools and school systems. In Table 3 below the range of teachers learning activities observed at the school have been differentiated on the basis of their likely resourcing within a school's Training and Development budget. The allocation of resources to teacher learning is usually, though not exclusively, for what we have referred to as the formal Training and Development activities organised within the school or by the school system and it is these that are listed in the right hand column of the table. The division in Table 3 suggests that although the Training and Development resources of the school and DECS allocate resources of time and money to a wide range of teacher learning activities there is also a substantial group of activities that are less likely to be allocated resources in planning of college and system budgets. Examination of the activities listed in the informal learning category suggests that most incur no direct financial cost. Clearly they do require allocation of teachers' time and it is this resource that needs to be

considered if the important role of this informal learning is to be given more appropriate recognition.

Table 3. Likely resourcing of formal and informal teacher learning.

Informally resourced

Formally resourced

Reading/reflection

Visiting of educational sites

Observation

Role playing

Teaching and team teaching

Mentoring

Planning and joint planning

Action research

Practice and 'play'

Performance management

Learning teams

Training and Development committees

Conversations

Induction programs

Networking

Lectures

Questioning

Staff meetings

'Show me now'

Conferences and workshops

Demonstrations

Formal study

Our final reason for proposing that more attention be given to the details and support of informal teacher learning is that it has a high potential to result in quite powerful learning. Power is used here in the sense that Bruner (1996, p. 47) used it to refer to the 'generative value' of the constructed knowledge. To make this point in a suitable manner it is necessary consider briefly how we might conceptualise the nature of the process of learning.

#### Student learning and teacher learning

How should we consider the processes of teacher learning? Here we will do this in two stages. First we will establish a framework for discussing teacher learning and will then use that framework to reflect on features of teacher learning we have observed in a case study of a school involved in the TLP. Then we will consider teacher teaching and how the teaching of teachers that we have observed seems compatible with the broad learning framework.

Teacher learning is learning. We see no good reason to propose or support a fundamental division of learning processes based upon a difference in age. In adopting this view we accept the arguments made by Susan Carey (1985) that the differences in child and adult learning are largely knowledge based, not based on fundamentally different representational systems in children and adults. For this reason it

seems sensible to examine teacher learning and teaching using frameworks developed for the analysis of other learners, in this case student learners.

The American Psychological Association commissioned a summary statement on learning (American Psychological Association, 1993) that proposed a set of principles that were representative of the current state of research on student learning. This statement describes learning as a process that is:

- ¥ active and constructive;
- ¥ goal-seeking and meaning-generating;
- ¥ directed by learners according to their beliefs, affective states and motivations;
- ¥ facilitated by collaboration;
- ¥ and influenced by context.

These principles are central to a range of contemporary views of student learning, including the notion of self-regulated learning (e.g., Winne, 1995). In these views the motivational expectations and strategic actions of students in achievement of their goals are seen as key causal influences on what is learned. The same set of influences operates when teachers are the learners. When teachers are learning about their students, about teaching procedures, about their colleagues and schools, or about the communities in which their students live, the

quality of their learning will depend upon these same factors. It will depend upon their purposes, their dispositional states, the strategy nature of the activity they undertake and, of course, on the way that the teaching environment is organised.

### Teaching for teacher learning

If this is the view of the teacher as learner we can ask how supportive of such learning are the environments in which teacher learning occurs. That it is important to pursue such a question is suggested by a number of recent commentaries on professional development. Here we will refer to two of these. Ann Lieberman (1995) questioned whether the conditions being set up for American teachers when they are learners are ones that the teachers would set up for their own students.

Most of the in service training or staff development that teachers are now exposed to is of a formal nature. Unconnected to classroom life, it is often a melange of abstract ideas that pays little attention to the ongoing support of continuous learning and changed practices

The second comment comes from a teacher involved in a case study in the TLP.

I think the problem here is we're so intent on talking about the best learning theories when we talk about student learning, the need to

reinforce information, the need to practice and apply. When it comes to teachers, teachers forget about all those learning principles and just assume that teachers can do those things automatically...they'll sit you in a group because you're new and they'll just throw all this information to you: information you need now, information you need at the end of the year, at various times, and you're supposed to retain all this information and know all the procedures.

(Case study teacher)

What are the preferred alternatives to these ways of teaching teachers?

The implications of the model of self-regulated learning for teaching have been explored recently by Paris and Ayres (1994) and this provides a useful starting point for considering the types of conditions that might be more conducive to self-regulated teacher learning. We have amended Paris and Ayres list slightly but support the thrust of their view that self-regulated learning is likely to be facilitated by environments that:

- ¥ allow for an element of personal choice on the part of the learner;
- ¥ provide a level of challenge relevant to the particular learner, so that some degree of risk-taking is involved and is encouraged;
- ¥ allow the learner to take control of the direction in developing plans and setting goals for their own learning;
- ¥ provide for collaboration;
- ¥ providing time for practice;
- ¥ is focussed on the construction of meaning and strategies that have relevance to the learner's situation;

¥ encourage evaluation and reflection;  
¥ are rewarding for the learner, so that further learning is encouraged.

The emphasis in this list is on the individual activity of the learner

and, while it includes collaborative action, it could give more attention to the influence of the context within which learning occurs.

Following the work examining the effect on student learning of the school's sense of community (e.g. Battistich, Salomon, Watson & Schaps, 1997) we think it important to add one further condition to the Paris and Ayres collection:

¥ the teaching environment provides a sense of community for learners

Teaching for self-regulated teacher learning

With this set of conditions argued to be ones that foster self-regulated learning in students it is interesting to consider the extent to which the instances of teacher learning we have listed in Table 1, both formal and informal, are likely to have these characteristics of self-regulation when teachers are students.

All of the activities included in Table 1 might, in particular instances, vary substantially in the extent to which they encourage self-regulatory learning. Thus, a colleague may or may not encourage effective collaboration when acting as teacher and an outside expert may or may not engage teachers in collaborative examination of

challenging and relevant tasks. However, it seems reasonable to argue that the self-directed and collegial learning activities could be expected to involve several self-regulatory characteristics in most instances - learner choice of goals and plans, learner control, relevance to the immediate situation of the learner, a degree of risk, and some sense of community.

Many of the examples discussed in the case study investigation in this school were seen by teachers to be of this character. For example, the learning generated from the teachers' work rooms was reported to be collaborative, designed to be meaningful to the teacher, responsive to the goals of the teacher, and allowed for further development of skill in this area. The unusual nature of these work rooms, unusual for a secondary school because teaching occurred in the presence of other teachers, did create a sense of community.

The challenge for those teaching in the more formal sessions, during the induction program, staff meetings and particularly during sessions run by outside experts, is to get close to the situations of the individual teachers. In these cases it is more difficult to do this than it is in the work rooms, because the individual teachers' situations vary quite widely. Some of the formal sessions we observed were mainly talk sessions in which quite a large amount of information was presented at the one time. By way of contrast, the role playing sessions in which worst and best practice were simulated by staff provided examples of formal training and development sessions that were

directed by others but which had high potential to be self-regulatory for individual participants. The challenge for those who are designing these other-directed, more formal sessions is to seek to facilitate some degree of self-regulation for the teachers who are acting as learners.

### Implications

Change can be generated from within a school. In other papers in this symposium a set of practices and policies that generate productive change have been described. The outcome of these practices is, to a substantial extent, dependent on the changes in understandings held by teachers about their teaching and about their communities. Powerful changes in understanding are not only generated by formal professional development. The analysis set out here, based on case studies of schools engaged in a moving on process, indicates that change in understanding is also generated by the teachers' informal learning activities. The widespread nature of these activities, and their low profile in the training and development agendas, suggests that they may be undervalued and under-resourced. Unless they become more explicit components of professional development plans and budgets their value as generators of change may not be realised. Their self-regulatory character suggests that they can also be used as a guide in the design of the necessary formal professional development activities for teachers.

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