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ABSTRACT

This investigation monitored the perceived effectiveness of a professional development program, called Facilitating Effective Learning and Teaching, in improving teacher practice. The program assumes that improvement is likely when the participants understand and value the learning process and themselves as learners and teachers. Program components included a challenge for change on the part of individual teachers, teachers operating as learners, and implementation of learned ideas in the classroom. The program examined the following aspects of learning: the meaning of learning; individual ways of learning; attitudes; students displaying what they know; facilitating the learning of new ideas; managing concentration; learning by reading, writing, and listening; facilitating remembering; learning in different contexts; students learning to organize themselves as learners; and monitoring learning. Evaluation of the program with 78 secondary teachers in Melbourne (Australia) showed that the quality of teaching and learning can be improved by increasing the school community's understanding and valuing of the learning process and individual variation in learning. Positive outcomes from the program included an increased preparedness to examine change by teachers, the fostering and legitimizing of positive attitudes towards classroom change, and a preparedness to be involved in change processes. (JDD)

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Facilitating Effective Learning and Teaching

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The present investigation is aimed at monitoring the perceived effectiveness of a professional development programme intended to lead to an improvement in teacher practice. The programme engages teachers in a practical analysis of the learning process from two perspectives; as self-reflective learners and their work as teachers. A guiding foundation of the programme is a model of learning

The programme has as its focus a valuing of what teachers already know about learning and teaching. It assumes that improvement is likely when the participants understand and value the learning process and themselves as learners and teachers.

The evaluation of the approach so far has shown that it is achieving this aim; the quality of teaching and learning in a school can be improved by increasing the school community's understanding and valuing of the learning process and individual variation in learning.

The paper identifies several positive outcomes of the programme, including an increased preparedness to examine change by teachers, the fostering and legitimizing of positive attitudes towards classroom change and a preparedness to be involved in change process. Teacher confidence about engaging in change knowing that at the base of the change was a sound model of learning is discussed.

A major component of the work of teachers is to put in place contexts in which their students can learn. To do this effectively demands, in part, a practical knowledge of the learning process and the means by which learning is facilitated. Over the last two decades theories of learning have undergone considerable change. One contemporary type of model of learning is the constructivist type characterised by a focus on the building of personal representations of aspects of the world (for example, see Cobb, 1986 or von Glaserfeld, 1988), with learner-initiated processes implicated in the construction process. Access to these emerging ideas is necessary if the quality of teaching and learning in schools is to be improved. Effective teachers may be expected to benefit from the opportunity to research and evaluate these ideas within the context of their regular teaching and to reflect on the implications that they have for their teaching practice.

The professional development programme examined in this investigation has this focus. It involves a systematic exploration of the learning process. It recognises the complexity of this process and examines particular aspects at a time. Gradually, as more aspects are investigated, a model of learning is built up.

The programme makes a number of assumptions about learning and how one goes about changing one's knowledge of learning; that (1) knowledge is acquired through active construction processes that require pupil action and the investment of attention (Cobb, 1986), (2) knowledge construction is personal; individuals construct knowledge in different ways, (3) there is a need to distinguish between the 'demonstrated knowledge' and the means by which the knowledge is constructed (4) all learners have an implicit knowledge of how they learn and that they can manage and broaden how they learning by making explicit to themselves, through processes such as reflection, what they already know implicitly, (5) learners need to be motivated to learn and to believe that they can learn; motives and purposes for learning determine the extent of engagement in learning, (6) learning is more likely when learners have framed up goals, problems or challenges for

learning; knowledge is acquired when it is seen to solve problems or meet challenges (7) learners use what they already know about the topic being learnt and (8) knowledge is contextually-anchored; ideas are learnt in particular contexts first and then gradually generalised.

These assumptions provide a basis for the programme and the knowledge and beliefs it sees as important for learners to learn.

The aspects or components of learning examined are as follows:

- 1 **The meaning of learning** Participants reflect on what they think learning means, explicate their own models of learning, analyse the everyday school situations in which they are required to teach and examine constructive things that they can do when they find learning/teaching difficult.
- 2 **Individual ways of learning** Participants examine a range of ways of learning and learning preferences and what these mean for effective teaching. They examine the range of teaching strategies available to accommodate this variation in learning preferences and the relationship between their teaching styles and their preferred ways of learning.
- 3 **Attitudes and learning ?** Participants examine the effect of self-concept on learning, the role of self-talk in inhibiting or promoting learning, attribution styles and the role of effective teaching here.
- 4 **Students displaying what they know.** Participants examine the process of showing what one knows on learning, the role of the teacher in this process, opportunities that they give students for showing what they know, the importance of this on learning, ways of broadening the opportunities they give students to show what they know and ways of helping students to automatize their preferred ways of showing what they know.

- 5 **Facilitating the learning of new ideas** Participants explore strategies for helping students learn new content knowledge, learning and thinking strategies and positive attitudes to learning.
- 6 **Managing concentration** Participants examine ways of helping students to make optimal use of their attention and short-term memory.
- 7 **Learning by reading / writing / listening** Participants analyse and monitor a range of strategies for helping students to learn by reading, writing and by listening more efficiently.
- 8 **Facilitating remembering** Teachers examine ways of building long term memory strategies into their teaching and helping students to remember more efficiently.
- 9 **Learning in different contexts.** Participants examine how their students can learn in a range of contexts and the advantages and limitations of each.
- 10 **Students learning to organize themselves as learners.** Participants examine issues associated with helping students to organize themselves as learners, to decide their purposes or goals for learning, monitoring progress in learning and developing an action plan. The concept of the learning episode is seen as an essential integrating principle here.
- 11 **Monitoring learning** Teachers examine a variety of ways in which their students can learn to monitor their own learning and to see the values of this.

The implementation of the professional development programme acknowledges the three components identified as necessary in a teacher

change programme (Fullan & Pomfret, 1977); a challenge for change on the part of individual teachers, teachers operating as learners and the implementation of the ideas learnt in the classroom. Each of these is incorporated in the present programme.

The importance of the learning being oriented towards resolving a challenge or solving existing problems held by the participants is not an explicit aspect of all models of teacher change. Joyce and Showers (1983, 1988) identify five conditions that characterise successful teacher change programmes; (1) presentation of the information, (2) modelling or demonstrating the teaching strategy, (3) practice under simulated, more controlled conditions, (4) opportunity for structured feedback re the teaching behaviours and (5) transfer to the classroom. This approach doesn't directly ensure that participants have framed up challenges or purposes for engaging in the change process. Present approach more directly encourages teachers to frame up challenges for themselves in relation to issues associated with learning and teaching. by collecting data in their classrooms.

The notion of seeing teachers as learners is an essential second aspect of the professional development activity. Any activity needs to facilitate the constructive process and makes the assumptions about learning noted earlier. Teachers, like any other learners, differ in their preparedness to engage in change. This preparedness is related in part to the individual teacher's implicit models of and beliefs about teaching and learning. Teachers range from those who resist efforts to change their classroom practice, through those who are more positive to change if it is seen to be 'practical' and involving relatively small changes in their practice to those who are willing and prepared to change.

Associated with this is the notion that teachers, as learners, differ in how they respond to any programme, for example, the rate at which they implement change, whether they are prepared to engage in critical reflection of their practice (Grant, 1984; Schon, 1987), their relevant conceptual knowledge, for example, their existing knowledge, attitudes and

conception of teaching (Joyce, Showers & Weil, 1992). Teachers' personal concerns at any time can influence their response. Any professional change programme needs to take account of this variation

Learning is facilitated when learners have the opportunity to learn both co-operatively and individually. Change in teacher practice is more likely when the professional development programme provides the opportunity for collegiate and co-operative-collaborative activities (Glatthorn, 1987). Shared activities such as discussion, team teaching, mutual observation of teaching, joint problem-solving are important.

As well, individual participant activity, with teachers taking responsibility for the aspects of the programme is important. Teachers work on mutual issues of concern identified by them, group self-direction and systematic reflection (Glatthorn, 1987; Wells & Chang, 1986). Many staff development activities involve doing things to teachers rather than with them, still less by them. Not only is this what happens, but teachers expect it to happen; their expectation of professional change is that this is what will happen (Fullan & Hargreaves, 1991).

The third aspect of a professional change programme is the opportunity for the teacher to explore and demonstrate the new idea within the classroom context. Various aspects of schools may affect this opportunity; teacher isolation versus collaborative support structures, clear and well-defined goals versus unclear, diffuse goals, the extent of encouragement to explore and practise novel ways of teaching, the extent to which the existing practices can accommodate the novel practices, access to within-school and external support and consultancy for implementing the novel practices and support for dealing with the plethora of demands that arise within the classroom and that can distract from the novel practice being explored.

The present activity attempted to take account of these issues. Teachers were encouraged to develop their own action plans or individual change programmes for dealing with particular challenges, research these in their

classrooms, trial, experiment and collect data relating to learning, bring to the collaborative discussion sessions the relevant data and to re-orient their action plans accordingly. The pre-session research activities were intended to encourage teachers to (1) analyse their purposes for using teaching procedures that they used and to analyse the assumptions and beliefs underlying their practices, (2) take responsibility for the decision-making and implementation of curriculum in their teaching, (3) legitimise the analysis of teacher purposes and practice and (4) to apply research outcomes in their own classrooms and to improve skills in analysing their teaching and gathering data relating to learning.

In summary, then, the present investigation involves the evaluation of a professional development programme intended to improve the quality of teaching by involving teachers in a systematic exploration of the learning process, implemented in a way that reflects the assumptions of constructivist learning. The programme is evaluated in terms of its perceived capacity to change teacher practice.

The Design of the Present Investigation

The teachers involved. The teachers involved in the investigation were from a state secondary school and an independent co-educational secondary school in eastern metropolitan Melbourne. In all, 78 secondary teachers were involved. All of the teachers were secondary qualified and represented the range of subjects usually taught in secondary schools in Victoria.

The professional development programme used. Facilitating Effective Learning and Teaching (or FELT) (Munro & Munro, 1992) is the professional development programme used. This programme is aimed at improving the quality of learning and teaching in schools by assisting teachers to understand the learning process and its implications for teaching. It provides teachers with the opportunity to relate their teaching practice to issues associated with learning. It encourages more than learning new teaching procedures or a new body of knowledge; it involves a broadening

in how teachers perceive learning and their roles and expectations in it. Teachers are encouraged to extend their data base on what they know about learning and teaching to match their discipline area and teaching style. The framework for implementing the professional development involves four stages:

- (1) **What is the FELT approach ?** An introduction to the FELT approach to teaching and learning.
- (2) **What does the FELT approach mean for me as a teacher ?** Staff analyse their teaching in terms of FELT.
- (3) **How can I help my students to learn about learning ?** Staff are in-serviced so that they can take their pupils through the How Do I Learn ? unit.
- (4) **Teaching to other staff : The multiplier effect.** Individual staff within a school are in-serviced to teach the approach to other staff. This facilitates development and responsibility at the local school level.

The present investigation examines the first two stages.

What does the FELT approach mean for me as a teacher ?

Teachers work through a reflective study of the learning process, examining at first hand particular key aspects of learning, reflecting on how they learn and identifying the implications for them as teachers. The key aspects examined include concepts of learning and the models that learners have of learning and how learning occurs, the learning - teaching relationship, individual ways of learning, strategies for displaying what one knows, being aware of one's existing knowledge base, strategies for changing one's content and attitudinal knowledge base and building a repertoire of learning strategies, the importance of questioning and risk-taking in learning, understanding the role of attitudinal and affective influences on learning,

strategies for managing attentional processes in learning, for learning by reading, writing and by listening and the link between these and learning preferences, for encoding and retrieving information from long term memory (semantic, episodic, etc.) and for monitoring learning.

At the same time they analyse their teaching in terms of FELT; they identify the aspects they do well and the aspects on which they would like to work further. They develop action plans for the teaching procedures they intend to trial, monitor and evaluate. They are supported by collegiate activity to implement the approach on a faculty / year level basis and are invited to be involved in peer coaching.

The reflective examination process develops in a three-phase format for each aspect of learning; a seminar-workshop session in which the teachers in a group analyse the aspect of learning, a pre-session activity in which teachers gather first hand data in relation to the issue and a post-session activity in which teachers follow up in their teaching. Prior to each session, teachers explore and trial particular 'pre-session' issues in their teaching. During the session these issues are examined in the context of the framework for learning. Staff analyse their teaching in terms of FELT; they identify the aspects they do well and the aspects on which they would like to work and develop action plans for the teaching procedures they intend to trial, monitor and evaluate in post-session activities. The phases develop as follows:

- (1) **teachers gather first hand data relating to a particular aspect of learning.** This involves teachers stating their perceptions of an issue (for example, a useful definition of 'learning'), monitoring particular teaching practices (for example, what steps do they take in their teaching to take account of different ways of learning, what opportunities do they give their students for displaying what they know) and collecting data about learning and teaching from their students in the course of regular classroom teaching (for example, how would their students define learning, how do they think they learn, what expectations do they have of

teachers). An example of the pre-session work for session 1 (Munro 1992) included teachers collecting the following data from their on-going teaching:

- a. What beliefs do your students have about learning ?
Participants gather student impressions of what they think learning means.
- b. What do you think learning means ? Participants reflect on their definition of learning.
- c. Helping pupils to improve their understanding of learning.
Participants suggest steps that they can take to help students to develop the most effective views about learning .
- d. How do beliefs about the reasons for success or failure affect learning ? Participants gather student explanations for learning successfully and unsuccessfully and note differences between the statements of students.

(2) **teachers evaluate the collected data in terms of a theory of learning in seminar-workshop sessions.** Teachers examine and analyse their perceptions and data in the light of contemporary cognitive theories of the aspect of learning. In most sessions they spend time working through simulated learning activities that exemplify the aspect of learning and that provide additional personal data for them and examining what the issue at hand means for their teaching practice, how they might explore, evaluate and implement it in their teaching. They develop an action plan for examining changed practice associated with the issue in post-session work. Key questions include

- (a) What does the aspect mean for my teaching ? How does it match / fit with my understanding of learning and teaching ?

What does it mean for how I teach ? How does it relate to what I already know and do ?

- (b) What are my strengths in terms of this aspect ? Where do I need further assistance?
- (c) How can I work with colleagues to support / implement the aspect on a faculty / year level basis ?

These sessions are usually held fortnightly or three-weekly for two hours. They are frequently taped and, where appropriate, proceedings transcribed and provided to the participants.

- (3) **teachers trial the change in their teaching practice**
Participants trial the issue in their post-session teaching and report on-going evaluation at subsequent seminar workshop sessions.

As an example of synopsis of the three stages, consider the aspect *Students displaying what they know* (Munro 1993).

Challenge

Who makes the opportunity to show what they know in your classes ? Who manages this now ? What opportunities do you provide your students to do this ?

Pre-session work

In this session we examine the ways in which students go about showing us what they know at any time and the importance of this for subsequent learning. Just as students differ in how they go about representing ideas in their minds, I believe that they have preferences in how they show us what they know about an idea. Some children are better at showing us by writing

what they know, some by talking, some by drawing pictures, some by demonstrating or acting.

An issue here is how we can give students the opportunity to show what they know in as non-discriminatory way as possible within the constraints of regular teaching.

Before the session you may have time to examine the following issues:

- (1) Alternative ways of students displaying what they know. Over the course of three or four consecutive lessons, note the different ways available to students in your classes to display what they know. What is the approximate frequency of each avenue of expression? Are some avenues more valuable than others? What determines this value? How do your students know the avenues that they are permitted to use. How do students value the various options or avenues? How do they rate them in importance?
- (2) When you are teaching a new topic or idea, give your students the opportunity to display what they have learnt in any way that they want. Have them discuss why they selected particular modes or avenues. Note the frequency with which each mode was used. Would some of the students have liked to use another way but thought that their peers might laugh at them or that the mode wasn't acceptable in the subject area?
- (3) What opportunities are there in your teaching area/s for students to learn and then to perfect the different ways of expressing what they know?
- (4) Who manages the opportunity to display what they know in your classes? How is the opportunity to show what one knows distributed across the students? Is there an obvious link between

learning styles / personality styles and who makes opportunities for themselves to show what they know ?

- (5) Students can display what they know in various groups: to one other person, in a small group and in the large group. What purposes would you see for display in each context ?
- (6) What beliefs do your students have about what they display, for example, would they feel comfortable about displaying what they know about something when they are not sure that it is correct ?

Session discussion : sequence of development

- 1. Why display knowledge ?
- 2. Making opportunities to display what you know.
- 3. Options for describing what you know about an idea
- 4. What types of knowledge do we have ?
 - 4.1 What types of ideas are there in something that we know ?
 - 4.2 Types of knowledge contexts ; formal and informal knowledge and bridges
- 5 Options for showing what one knows
 - 5.1. Demonstrating ideas through enactive modes.
 - 5.2. Displaying ideas in pictures.
 - 5.3. Displaying ideas in oral or spoken formats.

5.4 Using schematic or diagrammatic arrangements of written ideas.

5.5 Writing words in various ways

5.6 Using symbols to represent ideas

The values and uses of alternative ways of displaying what one knows.

6. Monitoring progress in learning
7. The relationship between displaying ideas and our understanding of them. Representing what we know in 'compressed' form
8. How our existing knowledge affects what we learn ?
9. How do we make use of what we already know ? Strategies for using existing knowledge.

Learner activity: Learners explore

1. The importance of having the opportunity to display what you know and the value of showing what you know on your subsequent learning. The implications of this for students in your classes
2. In what ways (constructive and destructive) can you make opportunities for yourself to show what you know. The ways in which students in your classes make opportunities for displaying what they know and how you can help them.
3. What are your preferred ways of showing what you know and how these are part of your preferred ways of learning ? What ways do

you use most / least easily ? Giving students options for describing what they know about an idea..

4. How can you broaden and improve how you display your knowledge ? How can you help your students to learn new ways of broadening and improving how they display their knowledge. What is a useful range of options for your students to learn ?
5. Providing a range of options for students to show what they know. Developing the attitude of first displaying what one knows in preferred formats and then recoding these ideas in 'conventional' or 'acceptable' formats. Curriculum implications for assessing and reporting what students know. Providing students the opportunity to learn to value alternative ways of displaying what one knows.
6. How can you ensure that you make optimal use of what you already know when learning a new idea ? How does what you already know affect how you learn and in particular how the initial impression that you form about any idea that they are learning influence subsequent understanding. How can you help your students to learn how to make maximal use of their existing knowledge ? What self-cueing questions and useful procedures might they learn to use to remind themselves to use what they already know. How can you help your students to explore how their existing knowledge affects what and how they learn and strategies for using existing knowledge.
7. Helping students to understand and use different types of knowledge. Helping students make use of their informal knowledge as a basis for formal learning in an area. Valuing and bridging different types of knowledge.
8. Helping students to understand the relationship between displaying ideas and one's understanding of them. Representing what we know in 'compressed' form.

As the sessions progress teachers developed gradually an action plan that focused on change in their teaching. They identified a series of short-term outcomes that were used to direct and to monitor change. They reported to the group at subsequent sessions the effectiveness of the change process. Collegiate support was important. Individual staff were supported by collegiate activity to implement the approach on a faculty / year level basis and were invited to be involved in self-monitoring, mirroring and peer coaching.

Demonstration of teaching procedures intended to foster an understanding of learning. Individual class teachers observed the particular learning strategies being taught weekly to their pupils by a teacher qualified in educational psychology and experienced in helping pupils learn how to learn. Prior to the demonstration, the class teacher specified a content area the class was currently learning, for example, learning a topic that was difficult. Following this demonstration, the model discussed the use of various strategies with the staff member. Teachers discussed when they might use the strategies in the future.

Outcomes of the investigation

Changes in teacher knowledge. Teacher reports indicated that the professional development programme led to (1) a significant change in their knowledge and beliefs about learning (the learning process and the types of learning actions that they needed to foster and encourage by their teaching), (2) an improvement in their perceived ability to facilitate learning in their classes and (3) an improvement in their understanding of individual ways of learning and ways of meeting them in their teaching. Teachers believed that the programme had led to an improvement in the delivery of classroom teaching in the school. These data are discussed in greater detail in Munro (1993).

The areas of gain that were most frequently identified by teachers included :

- (a) learning how to analyse the demands that their teaching style and content taught makes on pupils learning,
- (b) learning how to encourage pupils to reflect on how they are learning and to provide them with the opportunity to acquire more effective learning strategies,
- (c) developing ways of monitoring and evaluating the effectiveness of their teaching,
- (d) catering for a range of ways of learning in their on-going teaching and cueing students to use a range of learning strategies,
- (e) learning how to use a range of cueing strategies as part of their regular teaching, for example, procedures for cueing their students to visualise or for examining ideas from several perspectives,
- (f) learning how to help students to develop a concept of the 'learning episode' and to use this in their on-going learning,
- (g) being able to make use of students' existing knowledge in a range of ways, being able to tap into knowledge stored in episodic memory as well as verbal semantic memory,
- (h) understanding the role of attention in learning and how students can learn how to use it most effectively when learning,
- (i) learning ways of researching particular teaching innovations in their classes,
- (j) learning the distinction between different types of learning outcomes (such as deep and surface learning) and how they can teach for each type of outcome,

- (k) helping pupils learn more positive attitudes towards learning in their teaching areas,
- (l) giving students a range of options when they are learning, particularly when they find learning a particular idea difficult to learn, the value of modality switching,
- (m) learning how to reduce the emphasis from content to content and process and to allow students to learn how they go about learning, learning how to help students to become more independent learners, learning how to move control of learning from them to a more shared relationship with the student,.
- (n) becoming aware of the concept of learning and teaching models and the expectations attached to each and how these influence the actual learning programme,
- (o) giving students a range of options for displaying what they knew,
- (p) helping pupils to organize themselves more efficiently in their subjects,
- (q) learning to understand learning disabilities as a mismatch between the learning situations to which students are exposed and their preferred ways of learning rather than as the students being 'different' or 'faulty' in some way and
- (r) learning ways of assisting gifted and talented learners who have become bored and frustrated with classroom learning, who are 'self-driven' and motivated or who find it difficult to learn in situations in which their learning is directed.

The monitoring of teacher change over the course of 2 semesters has led to the identification of several conditions under which change was most likely.

Teachers were more likely to integrate aspects of the approach within their teaching when they

- (1) reflected on and made explicit their own models of learning and teaching. Simply providing specific pre-organised teaching procedures based on 'sound teaching practice' was seen as insufficient. Teachers reported valuing the opportunity to explicate and evaluate the implications of their own models of learning and teaching. Encouraging teachers to gather first-hand data from their students about aspects of learning, providing them with the opportunity to reflect on those data and relate them to their own models, to share the data with colleagues, to use those data to plan a course of action and then to trial the inferences that they draw was identified as valuable. Those teachers who reported trialing their own inferences and courses of action were more likely to report changing their their approach to teaching.

- (2) were able to observe teaching procedures that facilitated learning being practised in their own classes in response to temporary problems or challenges confronting them. Seeing concept maps or schematic maps, for example, being used in a wide range of teaching situations, a way to introduce a new topic and to encourage students to activate their existing knowledge, to organize information while reading, to assist in test preparation and revision, to relate ideas or their class learning to ask questions at a range of levels of complexity encouraged teachers to trial the teaching procedures. It was important that the teaching procedure be seen to assist in solving particular problems. Following the lesson-demonstration the unfamiliar procedures were discussed with the teacher; these were evaluated in terms of the ways in which they facilitate teaching and learning and ways of using them in the future were raised. Class teacher recording of the procedures seemed to increase the likelihood that they would be trialed subsequently.

- (3) experimented with the new procedure soon after seeing it. An optimal duration seemed to be of the order of two weeks. In addition, having students monitor the effectiveness of the strategy (for example, showing in their learning that it was successful), using an audio tape recorder or having a 'mirror' or a coach monitor it, and being able to discuss its success with the colleague group seemed to contribute to the likelihood of teacher change.

The extent to which the new teaching procedures had to be similar to teaching procedures already in the teachers' repertoire was difficult to determine. In several cases the procedure did not seem to have to be like existing procedures, for example, a teacher who experimented with and adopted the schematic map procedure with questioning had previously used a much more didactic lecture approach with little cueing of student background knowledge.

Summary

The curriculum innovation described in this article provides schools with one of many options for improving the quality of learning and teaching in schools. The approach legitimizes an exploration of the learning process by pupils, teachers (and, incidentally, parents). The concept of individual ways of learning, both at the teacher and student levels, is critical. Valuing and understanding one's own preferred ways and reflecting on ways of broadening it, are foundations. Understanding and valuing how others learn is also important.

Positive outcomes of the programme were an increased preparedness to examine change by teachers, the fostering and legitimizing of positive attitudes towards classroom change and a preparedness to be involved in change process. Teachers reported feeling confident about engaging in change knowing that the basis of the change was a sound model of learning. At various times during the programme it was possible to use this model to predict and anticipate. It also provided a base against which findings could be evaluated and modifications made. It was used for examining and

monitoring change and for suggesting the use of a range of techniques, for example, for the collection of classroom data. It should also be noted that throughout the programme the model was seen as itself being modifiable.

FELT is aimed at improving the quality of learning and teaching in schools. It assumes that improvement is likely when the participants understand and value the learning process and themselves as learners and teachers. The evaluation of the approach so far has shown that it is achieving this aim; the quality of teaching and learning in a school can be improved by increasing the school community's understanding and valuing of the learning process and individual variation in learning.

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