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Emotional dimensions of major educational change: A study of higher education PBL curriculum reform

Introduction

Undertaking major educational change may challenge educators at multiple levels of their personal and professional lives as it stands to alter not only curricular materials and teaching practices but also management and organisational structures, pedagogical beliefs and collegial ways of working. Much of the literature associated with implementing educational change focuses on the rational–structural elements of the organisation (Hargreaves 1998), and ignores the cultural or human side of the change process (Evans 1996). There is very little research into the collegial or the emotional dimensions of educators' experience of the change process (Hargreaves 2001; Leitch & Day 2001; Beatty 2002).

This paper presents the findings of a participatory action research study that explored the emotional dimension of implementing major educational change in a higher education context. Specifically, it portrays the emotional dimension of the lived experience of participants of the School of Medical Radiation curriculum development team as they implemented a fully integrated problem-based learning (PBL) curriculum into an undergraduate degree program. The research was undertaken over a three-year period and incorporated elements of Fullan's (1992c) three phases of educational change, that is;

initiation, implementation and institutionalisation. This reform project was significant in that a whole curriculum model of problem-based learning was implemented together with major changes in the organisational and management structure of the school.

Context

The School of Medical Radiation's change to a problem-based learning curriculum began in the early 1990s with a move to a more student-centred curriculum. Various aspects of problem-based learning methods were piloted in individual subjects and the success of this learning approach acted as a catalyst for all staff to consider further curricular development along these lines. A curriculum development team was established and the services of an external consultant were engaged to provide the team with training in problem-based learning and curriculum development processes (King & Cottrell 1997). The team took a collaborative and inclusive approach to the reform project, and all stakeholders likely to be affected by the proposed changes in curriculum were invited to attend a series of experiential workshops. Given the complexity of the curriculum, which covered the three streams of medical radiation, that is diagnostic radiography, nuclear medicine and radiation therapy, the reform process allowed for a two-year curriculum development period as well as a two-year implementation period.

Research Approach

The collaborative team approach that was developed and maintained throughout this reform project was based on the principles of participatory action research (Grundy 1982; Carr & Kemmis 1986; Kemmis & McTaggart 1988) that aim to encourage active participation and ownership of the process. Responsibility for decision-making and action was devolved to the curriculum development team, with both the Head of School and external consultant taking advisory roles rather than direct leadership or coordination roles. Team membership was voluntary and included all members of the undergraduate teaching team, all of whom took active roles in the curriculum design and development process.

Of the ten staff members in the curriculum development team, five team members worked full-time and five worked part-time. Eight of the team members were female and the largest professional stream representation was diagnostic radiography with six members of the team being former radiographers. The ages of team members ranged from 24- to -56 years of age at the commencement of the project, with the two youngest staff members having less than two years teaching experience within the tertiary sector.

Table 1 presents the participant profiles. The data is presented in ranges in order to preserve the anonymity of individual participants.

Table 1 Participant profiles

Gender	Male	2
	Female	8
Work status	Full time	5
	Part time	5
Age range	<25 years	1
	25-35 years	2
	36-45years	5
	> 45 years	2
Years of tertiary teaching experience	< 2years	2
	2-5 years	2
	6-10 years	3
	10-20 years	2
	>20 years	1
Professional stream affiliation	Diagnostic radiography	6
	Nuclear medicine	2
	Radiation therapy	1
	Unaffiliated	1

Over a number of years the medical radiation program had been upgraded from diploma to degree status and changed its focus towards student-centred teaching practices. As a result, the longer-term team members had considerable experience in curriculum reform processes. However, few of us had any experience in using problem-based learning teaching and learning methodologies and so in relation to the context of this project of developing and implementing an integrated problem-based learning curriculum, we were all relative novices.

Research method

My role within this project was twofold; first, as participant, I chaired the curriculum development team, and second, as researcher, I observed and analysed our progress and shared this information back with the collaborative team. Team members actively contributed to the research process with reflective discussion of the preliminary analyses in team meetings.

As this project was conducted in my own workplace and with colleagues as co-participants, it was important to reduce the separation of researcher from the researched and also to link understanding with application (Gitlin, Siegel & Boru 1989). As such, collaborative inquiry as a mode of action research was incorporated into the research design which enabled us to identify and confront the unseen constraints of assumptions, habits, precedence, coercion and ideology that lay beneath our practice (Carr & Kemmis 1986). Every effort was made to ensure that the confidentiality of data, and the anonymity and privacy of my co-participants, was maintained. However, as this was research was conducted in the workplace, maintaining the anonymity of the organisation has not been possible. As Altheide (1994) emphasises, valid interpretation of data needs to be contextualised, and, hence, in the interests of providing a description of the specific characteristics of this particular change initiative, it has been necessary to disclose the research setting.

Data sources

Three major data sources were utilised in this project. Firstly, interviews and ‘informal conversations’ with members of the curriculum development team; secondly, documents pertaining to the curriculum development and implementation process; and finally, my research journal which contained both field notes and personal reflections.

A number of interviews were undertaken that corresponded to Fullan’s (1992c) three phases of educational change; that is, the curriculum development phase, early implementation phase and late implementation/early institutionalisation phase of the project. As interviewer, I initiated topics for discussion but also replied to questions posed by interviewees—a style

that could be defined by Patton's (1990: 288) 'informal conversational style' or Minichiello's (1995: 62) 'indepth, semistructured' form of interviewing. The interview style chosen reflected my belief that in this context of collaborative workplace research it was important to enter into reflective discussion with co-participants in order to incorporate their understandings and interpretations of critical issues and events as they unfolded.

The issues raised in individual interviews were coded and thematically organised and presented to team members in a summarised format for discussion in subsequent team meetings. This enabled us to critically review our ongoing curriculum development progress and implement strategies to effectively deal with underlying issues and problems.

Data analysis

From the review of literature I developed an analytical framework to categorise the significant domains of change that educators undertake when developing and implementing problem-based learning. This framework, labelled the *Six Domains of Change* identified changes in: course structure and resource distribution; management and organisational structure; teaching materials; teaching role; teaching beliefs; and collegial relationships. A large volume of data was generated in this project and as a consequence computer assisted analysis was undertaken. Data were entered into the data management tool NUD*IST¹ and subsequently coded under the *Six Domains of Change* framework.

One interesting aspect of the data set that was produced was the degree and intensity of emotional reference made by participants in each of these domains. This was an unanticipated element of the data and initiated a subsequent review of the literature to see if this was a common experience for others undertaking major educational reform.

¹ NUD*IST (Non-numerical Unstructured Data* Indexing Searching and Theorising)—a qualitative data analysis program QSR (Qualitative Solutions and Research) NUD*IST version 4PPC.

This review revealed that the emotional dimension was gaining some precedence in the work and organisational learning literature (Hochschild 1983; Aune 1995; Goleman 1995; Tran 1998). However much of this acknowledgement was in relation to how emotions could be utilised as variables for managerial control (Fineman 1993b). As Putnam and Mumby (1993) propose, emotions are often presented as ‘weak’ or ‘disruptive’ to the instrumental goal orientation that drives most western organizations who prefer to submit to the ‘myth of rationality’.

The literature on educational change also demonstrated some recognition of the affective dimension of change (Jeffrey & Woods 1996; Fullan 1997; Hargreaves 1998) and the emotional work of teaching (Nias 1996). However, as Hargreaves, one of the major proponents of educational change argues, this discourse still tends to exclude the more intense emotions from the discussion of ownership, collaboration and management of change, and treats emotion as an accompaniment to rational thinking and planning rather than as an integral element (Hargreaves 1997b p. 14-15).

Fineman (1993a p. 9) also notes that within work organisations people are presented in ‘emotionally anorexic’ ways and where people’s emotions are acknowledged they are portrayed as *satisfactions* or *dissatisfactions* rather than the more passionate emotions of *worry*, *hate*, *anger* or *joy* and *excitement*. Fineman (1993a p. 10) continues by reflecting that little recognition is given to the way ‘feelings are produced, reproduced, camouflaged, communicated and acted upon in organizations’. Boler (1999) concurs with this premise and argues for more research into the roles that emotions play in shaping our perceptions, our cognitions and our values in our work and educational environments.

Given this review of the literature it was decided that the frequent and vivid portrayal of emotion within this project warranted further analysis. As such, a second layer of analysis was undertaken. Excerpts from interviews and journal entries that disclosed feelings and emotional terms such as ‘frustrated’, ‘worried’, ‘angry’, ‘excited’ or ‘happy’, and metaphors such as ‘I felt like a fish out of water’ were selected. Each emotional reference was related to the six domains of change and to the three time phases of the project so that a picture

emerged portraying changes in participants' feelings in, for example, their teaching role, or their working relationships with colleagues. The computer-assisted analysis allowed for data to be intensively scrutinized across multiple fields and time frames.

Implementing PBL

The process of developing and implementing a PBL curriculum involves the deconstruction and reconceptualisation of the curriculum from a practice framework (Conway & Little 2000). As Trowler and Cooper (2002) posit, all teaching practice is underpinned by theory. Undertaking major educational change like PBL necessitates a critical evaluation of the context and structures of teaching practice, as well as a critical self-evaluation of the values and beliefs underpinning this practice. Hence, this major evaluation invokes a series of disruptions and dislocations, transitions and transformations for academics as they reconfigure their personal, professional and collegial identities.

Savin-Baden notes the disjunction that occurs for students when engaging as learners in PBL where disjunction refers to 'a sense of fragmentation of part of, or all of the self, characterised by frustration and confusion, and a loss of sense of self. This often results in anger, frustration, and a desire for "right" answers' (Savin-Baden 2000 p.87). The data from this study demonstrated that developing and implementing the PBL curriculum evoked strong emotional responses in members of the curriculum development team that can be likened to Savin-Baden's description of students' disjunction.

These emotional disjunctions were exemplified in the transitions from former understandings of curricula and organisational structures, teaching materials and teaching roles and collegial relationships. Kincheloe (1993) affirms that emotional intensity often precedes cognitive transformation as does Nias (1996), who reports that educators experience intense emotional reactions and responses when the attitudes, beliefs and understandings underpinning their practice are challenged.

Findings

The findings of this study show evidence of intense levels of emotion produced by the reform process in the members of the curriculum development team. The following quotes are taken from interviews that were conducted at three time intervals throughout the project. The timing of the interviews related to my observations of increasing emotional turmoil in both myself and my colleagues, and, as such, the interview data are more a reflection of, or report on, the displayed emotion in context.

These quotes are exemplars of a larger data set. They have been selected because they are representative of the emotions expressed at the time or because they offer particularly insightful, vivid descriptions of the turmoil being experienced by participants. Not all participants experienced all portrayed emotions, but many of the experiences presented will be familiar to most participants in this reform process. Gender-neutral pseudonyms have been used to further protect the identity of participants as only two of the ten participants were male and use of gender specific pseudonyms would have made them more easily identifiable within the data set. However, it should also be noted that no distinct gender differences were found in either the degree or range of emotions portrayed in the data as all participants, both male and female, responded with levels of emotion unexpected in the original research design.

Frustration and anger

A common emotion expressed in many interviews was frustration; much of which resulted from challenging previous conceptions of teaching and work procedures. In the early stages of curriculum development much of our progress in team meetings was reiterative as we tried to establish a sense of common purpose and direction. For those participants more intensively involved in the process there was frustration with the continual revisiting of previous plans and decisions:

Not everyone being present at everything, I find that very frustrating because you have to go over everything time and time again. I know I'm just as guilty as everyone else but you think, 'Oh God, we've got to go over that again'. (Lesley)

Five team members were part-time workers, which made meeting times difficult to schedule, and hence when all team members were present at meetings we often had to review previous material in order to inform all participants of progress. Much frustration was expressed with the continual meetings and increased time devoted to developing the curriculum, as this was on top of our normal workload:

That's frustrating isn't it ... because you have an agenda of six things or ten things and you're lucky if you achieve one or two of those things ... and you come away feeling like I've just wasted a whole morning and I could have done a half a dozen things in my office ... I had to write this or do that or prepare material and you feel it's just a real waste of time ... even though you've achieved two things perhaps - you're ever aware that time is of essence and you need to get a lot more done. (Dale)

The collaborative decision-making process itself evoked frustration in participants, as it was so time consuming:

Our time is precious. We've all got hundreds of other things to do and it is just so frustrating to block out two or three hours supposedly to achieve something at these meetings and to walk out, if you're lucky to have achieved 15 minutes worth of work ... that really is annoying. (Mel)

Like most participants, Mel recognised that it was important to have all team members involved in this process:

I think we've progressed quite well ... at times it's been a little slow and a little bit frustrating mainly because it's been hard to get everyone together to make important decisions and they're decisions that can't be made by one or two other people ... but I think we've done well considering that this is on top of our other work. (Mel)

Shared decision-making represented a new demand on participants that was not only time consuming but also necessitated confronting colleagues and negotiating differences in order to make decisions (Weiss, Cambone & Wyeth 1992). This situation was contrary to our previous patterns of interaction where we had been relatively autonomous in our decision-making and control of our specialty teaching areas. Trowler and Knight (2002) describe the distinctive cultures that develop within university departments and workgroups, each workgroup area tending to develop their own endogenous practices and conventions. Specific rules and sets of meaning become established over time that become embodied

within the 'taken-for-granted' understandings of practice. However, major change challenges these established patterns and as a number of participants in this study found, these disruptions lead to frustrations and resentment:

It's been a lot more on-the-spur-of-the-moment stuff than I'm used to because I'm used to knowing exactly what I've got to teach, when, and to whom. It's much more spur-of-the-moment stuff which I didn't realise how much I resented. I didn't realise how organised I like to be until I wasn't organised, and then I realised I resented being not organised. (Lesley)

For others like Jude, challenges to previous and preferred ways of working caused great tension and anxiety:

I would really like it if things could be planned well in advance a bit more. I find it almost a bit scary and unnerving when I know that something's going to be up and running tomorrow and we're just sort of working on it today. That really freaks me out and I just sort of think now that things have sort of gone along those lines that hopefully next year will be a bit better because we've got something to work from. I'm just hoping that this is the only year that it's going to be like this and then from now on it's going to be a little bit more prepared and not being left to the last minute. I know some people find it easy to work that way, but I find it very difficult to work that way ... it just makes me very, I don't know, tense and worried ... I just go home and I'm thinking about work all the time and I think, 'Oh, I haven't done this and I haven't done that', and it just puts it all on top of me and I hate that. (Jude)

As in other studies, (Nias 1996) the most extreme and negative emotions appeared when participants spoke of their collegial relationships, especially when this related to increasing workload or defining responsibilities:

Initially, at the beginning of the year, I felt really pissed off because I felt that I was doing work that shouldn't have been my responsibility, it should have gone to the subject coordinator. (Jude)

I just get really annoyed when I find out things late. I wish someone would just tell me because I would have saved myself a whole week's work. (Dale)

In this context the newly established culture of collaborative decision-making challenged the previous norms of behaviour and patterns of interaction. This evoked a sense of displacement for participants as new ways of interrelating, new social structures and new power hierarchies

were negotiated. Developing a shared understanding of collaborative work practice took emotional 'labour' (Hochschild 1983) as we had to individually and collectively redefine our social interrelationships and develop a new shared repertoire of understanding (Wenger 1998). The emotional labour involved in this process was related to the management of both our own, and others', emotional states (Jarzabkowski 2001).

Confusion

At times there was also confusion in some elements of the reform process. During the curriculum development phase participants felt confused and directionless with the collaborative planning process:

I suppose we're all unfamiliar with the process and ... the feeling I get is that it's the blind leading the blind a bit, and that, in itself, is not a nice feeling. (Alex)

The team approach to decision-making made some participants anxious because there was no expert leading the curriculum development. As Alex continues, some participants felt that they did not have the requisite knowledge or experience to develop the best curriculum model:

I feel a little bit lost with the whole process because we're just going along ... we've basically got some building blocks and an old course and we're just remodelling it. We're not quite sure if what we produce is going to be the best model. (Alex)

The critical review and reconstruction of our old curriculum and teaching practices unearthed many of our previously hidden conceptions and beliefs. As Trowler and Cooper (2002) assert, much of our teaching practice is based on tacit assumptions and recurrent practice. Significant change makes explicit the norms of behaviour and routine practices inherent in our teaching culture. Thus, change unearths the deeply held, but often hidden beliefs, values and understandings underpinning this practice, bringing them to the foreground of our consciousness. By undertaking the degree of structural change inherent in PBL, such as integrating the curriculum across subjects and across the academic and clinical divide, we broke down many of the artificial barriers separating our teaching domains, which in turn powerfully impacted upon our teaching culture.

Other confusions predominated when participants experienced a disparity between their former understandings of their educators' role and their new practice of facilitation:

I think there is also a little confusion in my mind of the role of the facilitator in that the facilitator often is an excellent resource person for some things, and, so, I find it a little bit confusing as to how to manage the two roles. Because sometimes you just need to facilitate the group. But other times there are issues that come up in the group, which perhaps you've got expert knowledge on. So how can I make that accessible to the students? (Robin)

During the early stages of curriculum implementation there was a period of dislocation between espoused theory and theory-in-use (Argyris & Schon 1978). This disjunction in belief and practice caused participants to feel displaced. They felt a sense of loss and incompetence: loss of expert status and loss of prestige. For a time this affected their self-esteem and for some, it resulted in a loss of pleasure in teaching:

I've been a little bit disillusioned myself because I thought it was going to be a way of teaching that I'm going to really enjoy ... I expected it all to happen this year and it hasn't really worked for me because in the tutorial groups I'm not a tutor, I'm a facilitator ... I have to keep reminding myself of that. But it's because I really love tutoring so much that I find I keep still falling into that mould every now and again and I really have to stop myself from doing it and I find it incredibly difficult. (Jude)

For Jude, the previous tutoring mode of interacting with students evoked a great deal of satisfaction. Like many other facilitators, a sense of professional identity and self-esteem was tied to understanding and beliefs about what constituted effective teaching. Nias (1996) confirms that educators' self-esteem is closely correlated to them acting consistently with the basic beliefs and values that lie at the heart of their personal identity. Hence, taking on the role of facilitator was not simply a matter of participants learning new skills, it also necessitated a redefining of personal and pedagogical stances (Savin-Baden & Wilkie 2000). As Evans (1996) suggests, change that affects deeply ingrained practices threatens individuals' sense of competence and leads to feelings of insecurity and inadequacy.

Worry and anxiety

The new facilitator role also evoked worry and anxiety in participants. In particular, anxiety associated with facilitating tutorial groups in areas other than their professional expertise:

I feel quite challenged by the prospect of being a third year facilitator because, although having been a radiographer in the workforce, I feel reasonably comfortable as a general radiographer. I've had very little experience in any of the specialties and I feel challenged and a little bit threatened by some of the content for third year. (Pat)

Participants felt vulnerable with this aspect of the facilitation role, as previously they had taught only in their specialist areas and had time to prepare thoroughly for teaching sessions. Initially, the idea of not being able to answer questions from students made participants feel anxious and incompetent. This, again, was strongly related to their perception of purpose as facilitators, and for some participants it took considerable time for them to trust the PBL process and transition from their former understandings of their teaching role.

Other sources of worry and anxiety related to the lack of clarity in the new roles and responsibilities. Some participants felt that there was no clear definition of who was responsible for each section of the new curriculum, who made the final decisions, and who would ensure that these decisions were followed through:

I'm just not sure. I just don't know who's in charge? I think a lot of the time we've been drifting along, everybody's still doing their own bit and we're not really sure who's in charge of this and who's going to control that and who's going to look after this bit? (Jude)

This lack of clarity in new roles added to participants' sense of being out of control and, for some, this added to their feelings of anxiety and dislocation. Evans (1996) also reports that significant change causes anxiety and confusion when participants no longer know what their duties are or who has the authority to make decisions.

The head of school acknowledged that managing the new teaching and coordinating roles was one of the more difficult aspects of the change process for team members:

I guess, looking back, we didn't work on this aspect in the two years of planning because I don't think we ever perceived that it would be a problem. But I think the management of it has turned into a major issue. It's interesting because I think the staff are going to take longer than the students to come to grips with working as a group. It's totally different to what's happened before. And the other difficulty with the group work is that staff are so committed for time that it's sometimes difficult to have time to consult with people and so on ... I think that's an issue. (Head of School)

Changing from individual roles where everyone had clearly defined duties to the new context where duties and responsibilities were still being negotiated amplified the feelings of insecurity. This was a time where confrontation of difficult issues was needed, however, as suggested by a number of participants this was not part of our normal repertoire of engagement.

We are very good at rubbing along quite nicely together but we don't confront the deep stuff underneath so we accommodate and accommodate and then wonder why at the end of the year we're all absolutely exhausted. Maybe if we'd confronted the issue when it happened it would have been dealt with by now. (Chris)

Anything that cuts into your personal way of operating and somebody else's personal way of operating is difficult to address, but maybe that's all the more important reason to address it? (Pat)

The collaboration required within PBL was far more intricate, complex and profound than our previous experiences of team teaching. As Jude explains our previous conceptions of ourselves as a teaching team was as a cohesive and collaborative community, but the new teaching methodology challenged many aspects of our collegial interaction:

It's been really interesting because we always thought that we were a really good school team wise but we all worked fairly singularly before and now that we really are having to pull together as a team it's brought a bit of tension and aggression to the surface, which I never, ever would have imagined was there. But now it is, and I'm hoping that as we become more familiar with how we're working that that's going to resolve as well and people will become more at ease with how we're operating ... really, we're working to very fine deadlines at the moment and that's putting added pressure on as well. (Jude)

The degree of collaboration required to manage the PBL curriculum resulted in more conflict within the team, but, as Fullan and Hargreaves (1991) note, disagreement and conflict are generally more prevalent in collaborative cultures because values and purposes are openly discussed and challenged. As such, it can be argued that conflict and tension are a natural outcome of any major change in practice.

Exhaustion

Many of the emotions experienced during the change process were intensified by exhaustion:

My reflection is that the staff are worn out. I know that we said at the beginning that this would be expected, that we knew that this would probably happen, but I think probably no-one realised just how worn out people would be. (Head of School)

The exhaustion was partly due to the enormously increased workload, tight deadlines and complexity of the reform project. As Lesley notes, initially this exhaustion probably distorted our perception so that it was difficult to recognise the positive outcomes of PBL:

I think we probably didn't see the benefits [of PBL] necessarily in the beginning, but I think that we were all suffering from just being worn-out and wrung-out. (Lesley)

This exhaustion was particularly prevalent during the early implementation stage of the project. Most participants felt overwhelmed, as every aspect of their teaching practice was new and nothing seemed familiar. There were new skills to be learnt as facilitators, new competencies to be developed in managing the tutorial group dynamics, new knowledge to be gained in professional specialty areas, new responsibilities to be undertaken in coordination roles. Nothing seemed to be the same as before, nothing could be relegated to automatic processing or habit, and everything required participants' full attention. Wenger (1998) suggests that we come to understand who we are in our organisational practice by what we perceive is familiar, usable and understandable, and just as importantly, we know who we are *not* by what is foreign, unwieldy, or unproductive. Thus, in this stage of implementation, when everything felt unfamiliar and foreign, participants had difficulty re-establishing and re-confirming their professional and collegial identities. This phase of the change process can be

likened to Fullan's (1992c) description of the *implementation dip*, where the costs of implementing a reform far outweigh the rewards.

Positive outcomes

However, towards the end of the first year of implementation there was a growing sense of confidence and more positive emotions were noted in many of the interviews. Improved student learning outcomes gave many participants confirmation that the PBL curriculum was 'working', especially when changes were noted in areas of concern with the old curriculum. One example was the improved integration of learning across the three professional streams and between the academic and clinical learning environments:

I think the most outstanding success is that we're now linking the clinical component with the academic component. That has been obviously a big success. I'm quite happy in my own mind that the amount of learning and the depth of learning is actually exceeding what we did before. I mean, their [the students] knowledge about the clinical practice and their knowledge about the application of various principles far exceeds anything that we've done before ... Previously students could just swat for an exam and sit for it and forget about it but now I'm hopeful that the students are retaining a lot of this knowledge and will be able to apply things. (Robin)

Robin also noted with excitement that students were using problem-solving processes in examination situations:

In the prac sims [practical simulation exams] the other day, I was amazed you could actually see the students nutting out issues which they hadn't got out of a book. But almost all of them, if they came up against a problem, you could see them trying to work through it and work out how they would do something from a clinical sense. And I thought that was something that hadn't been there before to that degree. So, I was impressed with that. That's a result of the learning process that they're going through. (Robin)

These changes in student learning processes and outcomes provided participants with the much-needed confirmation that the change in curriculum had been worthwhile. With time

and greater experience participants found that they became more relaxed and comfortable with the new teaching roles:

I think I've relaxed into it more and allowed more of myself to come through ... I had lots of expectations of what I thought I should be doing, like you do with any new process ... you have these things that you think, 'Oh, I think I should be doing that' and so you do that whether it's natural for you or not but ... I got a bit more relaxed and more myself towards the end of the year. (Lesley)

My confidence in working with the groups and facilitating has increased. I feel a lot more at ease and I feel happy working with the students. (Chris)

Others found that they enjoyed this form of interaction with students more than didactic lecturing:

I have enjoyed working with the students in this manner more so than just giving an ordinary lecture. (Gerry)

I think working in small groups has been a real bonus for me because I can get that instant feedback from the students which you tend not to when you're doing straight out lectures and it's been really fulfilling in that regard. Working closer with students, you have more of a rapport with them. (Jude)

And some participants, like Jan, enthusiastically embraced the potential benefits of the curriculum change, noting that it would have ongoing benefits for the medical radiation profession:

I'm really enthusiastic about the whole course. I think it will be great and, from a professional point of view, I can see the actual profession going ahead in leaps and bounds because of it. (Jan)

Transitions from disjunction

It is worthwhile noting that many of the positive emotions expressed in the final round of interviews related to some resolution of previous dislocations or fragmentation of personal, professional or collegial identity. For most participants some integration had occurred; that is, they had undergone some transition of previous disjunction. As new understandings and new conceptions of role, beliefs and values were established, participants moved from anger, frustration and anxiety to feeling more confident, satisfied and even, at times, enthusiastic.

One example of this transformation is demonstrated in Alex's three interviews. In the early stages of the reform process Alex was not convinced as to the advocacy of changing to a PBL curriculum. In particular, Alex was worried that we were replacing an already successful program with something for which there was no guarantee of success:

I suppose, first of all, we've had a very good course running for a long time now. It's been recognised throughout Australia. We've had, I think, a perfect type of course here. The students have been very happy with it ... we've been happy as lecturers ... the profession has been very pleased with it ... the profession's been very much involved with it and it has been going along smoothly for years and everyone's happy. And then PBL comes in. I discussed with Sam, 'Why change if something's working, why change it?' I was a little bit down to start with and you probably picked that up? In early days I was very critical of it because I wanted to make sure that we were replacing the existing course with something that's better ... so that was my main concern.

I suppose I was also concerned ... as a lecturer teaching the students with this method. We were all used to the lecture type of format and we were prepared. We've got our material prepared for it etc. It's going to be a new experience for me, it's going to be a new experience for the students and I haven't even to this date had enough evidence, personal evidence, that this whole process is going to work ... people have been saying that they're using it around Australia and the world and saying 'Yes, it's great'. But, personally, I haven't seen any evidence as yet. (Alex)

Like other academics (Sadlo, Piper & Agnew 1994), Alex had a powerful identification with previous teaching methods and a sense of competence and professional identity was founded in this experience. At the time, Alex did not recognise the need for change and hence was critical of the reform process. As a teacher, Alex wanted more evidence to be convinced that the change in curriculum would produce better student learning outcomes.

However, even after the first semester of experiencing PBL in action, Alex had significantly transitioned from this former perspective:

I think it is, to me so far, being involved in teaching for six years, it is the most enjoyable way of teaching, if you get a good [student] group that works well. After experiencing the whole process [of PBL] I enjoy the process, the actual teaching side of it. (Alex)

And by the end of the first year of implementation there was even greater confirmation for Alex that this was a better way of learning for students. Enjoyment of this teaching role, confidence in teaching skills and good feedback from students all confirmed Alex's belief in the value of the new curriculum:

Well, from a lecturer's point of view, it's been good. I enjoy working with the tutorial group and all that, more so than lecturing. And I like to bring the best out of the students, guide them without giving them the answers ... it's been good. (Alex)

Other major transitions were evidenced in collegial relationships. Many of the more intensely negative emotions experienced in the reform process were associated with the challenges to collegiality. Most participants found the changes in work practices and collegial relationships confronting, as we were accustomed to managing our own distinct subject areas and did not have to rely on colleagues for their input. As Gerry notes, having to now depend on colleagues for teaching material or information was frustrating:

The other big change is, because we're working in teams, you have to depend on other people to do everything when you want it done ... that's a problem if you like to get things done early or if you can't get your job finished because you're waiting for someone else to input theirs. I find that very frustrating. (Gerry)

Previous patterns of interaction and collegiality within the school could more closely be aligned with Hargreaves' (1992) description of an 'individualistic' or 'balkanised' culture wherein participants were individually responsible for one small section of the curriculum and there was little in-depth consultation required to manage the few elements of team teaching that were utilised. Previously, we had tended to interact more closely with colleagues who had similar beliefs and values as ourselves, or who had similar professional backgrounds. With PBL these boundaries were breached, as we had to interact with all members of the undergraduate teaching team. As shown by some of the previous quotes this transition was difficult to manage at times.

There were significant positive outcomes to this transition, however, as Gerry states in the final round of interviews:

I've really enjoyed these last few months at work because of the challenge of PBL. Because it was something different and because it was, I suppose, working in the team ... I didn't really feel so isolated. I think that was the biggest advantage for me. You're not feeling so isolated now as you were before, where you came in, did your own thing and nobody cared. Now, I know people are very interested in what you're doing. (Gerry)

There was a breakdown of the norms of privacy and isolation that is characteristic of individualistic cultures (Hargreaves 1998). As Gerry continues, there was a more professional approach to teaching within the team:

There's been a lot more professionalism and more talking about issues that affect us all ... people are actually thinking all the time now about what they're doing ... they think about things at home and they come in and say, 'Oh, I thought about something last night'. That happens often now. (Gerry)

In effect, teaching practice had become centralised within the actions and reflections, and collegial discussions of the team. There was a sense of scholarship about our teaching practice (Boyer 1990) that had not been evident before.

Conclusion

Much of the research on educational change and organisational cultures is based on how people think about change in their workplace and on the knowledge, skills and decision-making processes they undertake (Hargreaves 1997a). In this literature greater stress is placed on the cognitive or purposeful deliberations of participants, with very little acknowledgment given to how participants feel or what emotions are evoked in the process (Fineman 1993b).

Higher education institutions, like other organisations (Putnam & Mumby 1993), tend to separate thought from emotion by valuing rationality, objectivity and cognition above emotionality and feeling. But if we are to have a deeper and more effective understanding of

the impact of educational change on participants, we need to integrate the heart and the mind, and intertwine emotion with reason and judgement with feeling (Hargreaves 1997a) (Fullan 1997).

So, while this research project did not initially set out to investigate the emotional dimension of change, the intensity of emotion felt and expressed by participants in this reform process warranted further examination. The development and implementation of a PBL curriculum affected all members of the curriculum development team. We not only deconstructed and reconstructed our curriculum but we also deconstructed and reconceptualised our tacit assumptions, habits, and recurrent practices as well as the ideologies, values and beliefs underpinning these practices. We individually and collectively unearthed these beliefs and values in order to develop a new, shared understanding of our common purpose and practice. In effect, we transformed our personal, professional and collegial identities.

Hence, it is not surprising that with this profound degree of change we would experience intense and varied emotions. But as in our workplace there were no behavioural norms or precedents of how or where to express these emotions, it disrupted our reform process for a time. The research project itself, with its interviews and collaborative discussions of issues, provided one avenue to express and reflect upon our individual and collective emotions. It helped us to overcome the disjunctions and form a more harmonious conception of ourselves as educators in this new context.

This research has demonstrated that educational change does have an emotional dimension that must be acknowledged in the process of reform. We need to recognise that emotions both shape and are shaped by major change. Emotions not only influence the decisions being made and actions undertaken but also the collegial interrelationships pursued. By speaking of the emotional labour of change we can more effectively prepare staff for its impact and as a result humanise the reform process.

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