What are the characteristics of constructivist learning cultures?

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Abstract

This paper reports on some initial insights from a qualitative study investigating ways in which teachers who are committed to a constructivist philosophy construct teaching and learning. The study is a collaborative project between the University of South Australia and The Open University. The initial study is based around the work of four primary teachers in two schools in South Australia. These teachers have been involved in a South Australian Education Department innovative curriculum redesign project entitled 'Learning to Learn'. This project promotes a view of teaching and learning that values teaching and learning through: consciousness of who you are and why you do what you do, personal/social relationships and learning as construction. Data have been collected from weekly classroom observations; ongoing informal discussions with the teachers and senior staff; individual taped interviews with the teachers and ongoing document analysis. This paper identifies a number of emerging themes in relation to characteristics of constructivist learning cultures and highlight these, using classroom examples.

Introduction

Recent developments in South Australia have emphasised the importance of constructivism as a theoretical basis for educational improvement in government schools. The new South Australian Curriculum Standards and Accountability (SACSA) Framework, which will govern curriculum development and implementation in government schools for the foreseeable future, presents the 'central thesis of constructivism' as;

> that the learner is active in the process of taking in information and building knowledge and understanding: in other words, of constructing their own learning. Learning is the active process

> of engaging in experience and its internalisation in terms of thinking. (DETE, 2001, p. 2).

Since 1999, departmental funding has supported teachers and project colleagues in the Learning to Learn Project to contribute to curriculum policy for the future by developing 'pedagogy which elicits generative thought and creativity as the needed 'knowledge' of the future' (Foster, Le Cornu, Peters & Shin, 2002, p. 3). It draws on and promotes 'constructivism' as a theory appropriate to rethinking learning processes and moving towards achieving improved meta-learning.

Two of the authors of this paper have been university colleagues to the Learning to Learn project since its inception, while the third has been pursuing an interest in constructivist practices in classrooms in the UK. We decided to form a research team to investigate the perceptions and practices of four teachers who are involved in the Learning to Learn Project and who are currently attempting to implement practices with a constructivist orientation. Our research questions were:

- What are the characteristics of constructivist learning cultures?
- How are 'learning relationships' constructed in such classrooms?
- How are 'learning conversations' experienced in such classrooms?
- What kinds of 'learning tasks' are experienced in such classrooms?

This paper focuses on the first question.

Setting and Methodology

For our study we are using a qualitative research approach, as our aim was to achieve a rich and detailed representation of the 'what, how, when and where' of constructivist practices and learning cultures as they are experienced in four South Australian classrooms.

The study is located in two primary schools in Adelaide, involving two teachers in each school. One school is in the northern suburbs of Adelaide while the other is in the southern suburbs. Both are considered to be disadvantaged schools because of their high proportion of students who require government assistance. In one school the teachers, Gail and Chris, work with years 6/7 and R/1/2 respectively, while in the other school the two teachers, Nancy and David team teach two classes of years 1/2.

Data collection procedures have included initial interviews with each teacher, weekly/fortnightly classroom observations (of 1 -2 hours duration) throughout the first two terms of the school year (in conjunction with an interview with the teacher/s concerned), individual interviews with the school leaders and on-going document analysis.

A collaborative approach to the research is occurring through involving the teachers as much as possible, both in analysis and interpretations. Transcripts are returned to teachers regularly for annotation and further elaboration and meetings are convened once a term to allow

researchers and teachers to scrutinise the data and to compare and contrast emerging interpretations.

Clarification of terms: constructivism and learning culture

Central to constructivism is the notion that learners play an active role in 'constructing' their own meaning. Knowledge is not seen as fixed and existing independently outside the learner. Rather, learning is a process of accommodation or adaptation based on new experiences or ideas (Jenlick & Kinnucan-Welsch, 1999, p. 4). Proponents of social constructivism also acknowledge the importance of the 'environment in which learning is taking place' and 'learning that requires social interaction ' (Richardson, 1999, p. 147). In framing this study and interpreting the data we have aligned ourselves with a social constructivist view. While recognising the importance of the construction of personal meaning within teaching and learning, we are particularly interested in the ways teachers and students work together to construct learning cultures that enable this to occur. By learning culture we mean the holistic collection of practices, behaviours, attitudes, patterns of decision making, relationships and valued systems of thought that construct a particular learning context (Windschiti, 2002, p. 150).

Is it constructivism?: Teachers' views of constructivism

Before highlighting the elements that have emerged in relation to constructivist classroom cultures, it is best to start with whether or not the teachers perceived themselves to be 'constructivist'. All teachers were reluctant to describe themselves as constructivist teachers. Rather they explained that it was "a part of their thinking" or they were "to some degree". The following comments highlight this and they have all been included to give the reader a sense of each teacher's view;

> ... I would consider myself to be constructivist to some degree. I'm not sure what degree and I'm not going to put a number on it. But hands on, open ended questioning, exciting... (Gail, 12/2/03)

and;

> ...I've always been interested in a child-centred approach...but now it's also about giving children a language for talking about what they're actually learning about. (Chris, 12/2/03)

and;

> The first thing in constructivism is to make the curriculum relevant to children to find their own meaning...and it's about children having a say and an understanding of why they're doing it...and making discoveries for themselves. (David, 11/2/03)

and;

> It's about things like building on from prior knowledge, thinking skills and letting children have choices but knowing there's consequences for their choices. (Nancy, 11/2/03)

Clearly the teachers had their own views of constructivism. However, what came through in our conversations with them was that they talked about learning and all of the things they value, rather than having a sole focus on constructivism. This is not altogether surprising when one considers that they have been involved in a project called 'Learning to Learn' which offered a Core Learning Program which presented a multitude of learning perspectives including brain-based research, values in education and emotional intelligence, to name just a few.

The school leaders also had their views about constructivism. The deputy principal at one school expressed it in the following way;

> My view of constructivism? I think it's about a philosophy that has given rise to a pedagogical process that is around how a teacher constructs a learning environment...It's the processes that the teacher uses with the children to enable them to take charge of their own learning. (Deborah, 9/4/03)

While the principal said;

> What I see is individual teachers transforming what they're doing and they're making the learning more relevant to the kids that are in their class, that the kids are taking more ownership of the learning...if the language helps teachers to rethink and refocus then that's okay by me...I don't want to get hung up by the language and I don't want to say you're constructivist and you're not. (Peter, 7/5/03)

And the principal at the other school commented;

> Constructivism is very much about the learner and assimilating any new knowledge into the position that they already have and then working out what they're going to do with that knowledge. (Carol, 8/5/03)

However teachers and school leaders described it, there was an acknowledgement that 'things were different' in these classrooms to how they used to be and, indeed, if compared to more traditional teacher directed classrooms. Our initial interpretations of our data confirmed this. The differences could be seen in classroom organisation, the nature of the *learning relationships* and *learning conversations* and in the construction of *learning tasks* (see Peters, Le Cornu & Collins, 2003). In these classrooms, there was a clear focus on learning, with an emphasis on student participation. How did the teachers develop the sort of norms, values, expectations and attitudes that would enable this to occur?

The next section of this paper presents insights, using classroom examples, around how these teachers developed such a culture.

Developing a learning culture

All the teachers were committed to the idea of developing a learning culture , one where learning is valued and everyone involved is valued. They were also committed to the notion of student participation. This paper focuses on the development of such a learning culture. The following six elements have been identified:

1/ Establishing norms for learning;
2/ Renegotiating the students' roles and responsibilities;
3/ Explicit teaching of social skills and processes;
4/ Explicit teaching of metacognitive language, skills and processes;
5/ Renegotiating the teacher's roles and responsibilities;
6/ Being a reflective teacher.

Even though these elements have been delineated it is acknowledged that many of them are inter-connected and occur simultaneously in the classrooms. The order of them should not be seen as privileging one over the other.

1/ Establishing norms for learning

The teachers in this study appreciated that the students in their classrooms came to school with a variety of different attitudes and commitments to learning. They acknowledged that their parents/caregivers had a range of positive and negative attitudes towards school. One teachers described her class as "being a very varied group, both socioeconomically and academically" (Gail, 8/5/03) while a teacher in the other school described his school as a "very transient school...the area economically is low" (David, 11/2/03). As well as having a range of attitudes and commitments towards schooling, many of the students in their classes had a diverse range of emotional and social needs, as well as academic. The teachers made the following comments about their children; "We have some children with some real difficulties with emotional problems at home" (Chris, 12/2/03) and "There's a couple of children with really, really difficult backgrounds and if they have bad days, it affects the dynamics of the whole class" (Nancy, 26/2/03). Given these factors, the teachers realised that they needed to try and develop positive attitudes in children, towards themselves, each other and to learning. To do this, they established particular norms or 'shared agreements about ways of doing things' for their classes, which were based on their values and beliefs about what they considered to be important for effective learning to occur.

It started with the teachers' beliefs about relationships. All teachers in the study expressed the belief that the relationships they have with each student, and that the students have with each other, are integral to a classroom culture that optimises learning. Gail put it this way;

> I think relationships are really important. I really put a lot of time into talking through relationships and talking through the effects and consequences of behaviour. That is a real focus in my classroom. And I believe that if that isn't right then other learning doesn't happen. (12/2/03)

The teachers also understood that to engage in learning their students needed to feel safe. One of the ways that the teachers developed a safe and secure learning environment was to establish clear expectations regarding behaviour in the classroom.

Teachers spent much of their time in the first few weeks establishing *mutual respect* as a mode of interacting in the classroom. This involved talking about relationships and talking through the effects and consequences of behaviour. They introduced the term 'respect' to the students early in the year, unpacked it with them and then followed through to ensure that it was evident in the classroom. This included naming behaviours that indicated respect as they occurred so that children learnt about the term. The teachers did not assume that the children shared a common understanding of what it meant but rather spent time making it explicit.

The focus on mutual respect was evident in the teachers' interactions with the students and in their expectations of students' interactions with teachers and other students. Teachers listened and responded to children in ways that aimed to make them feel valued and that their ideas were taken seriously. They were conscious of what they said, how they said it and to whom. They were very aware of the importance of the teacher modelling the behaviours they expected from students and appreciated that it was the nuances, the subtleties of practices, which convey various messages. As Nancy said, "My manner is important...The way I speak...Keeping it calm...not raising our voices. Little subtle things like that" (11/2/03) and Gail explained; "Actions speak louder than words. So they see me model that...they see that I take them seriously and act upon the things they do and say...(8/4/03).

As well as modelling appropriate ways of relating, and talking about what the term 'respect' meant, the teachers used a variety of structures and strategies to support this commitment, as Gail explained;

> I really do try to spend a lot of time setting up systems, protocols, codes of practice, expectations, all sorts of things to develop a classroom atmosphere where relationships are good relationships. (12/2/03)

The notion of mutual respect underpinned everything that happened in the classroom. Teachers held high expectations that learning would occur and conveyed these to the children. They showed that they valued learning by showing enthusiasm for 'building knowledge', using children's interests as a catalyst and encouraging intellectual engagement. They spent time establishing clear expectations around different learning situations. For example, in one class the notion of a 'learning zone' was used to depict an area on the carpet where certain behaviours were expected, which would support the whole class learning together. Similar expectations were set for those times the children worked in pairs or groups. So as well as displaying respectful social behaviours, the students were also expected to show respect for each others' thinking behaviours. This included valuing each other's ideas and contributions and accepting that people understand things differently. As Chris said, "Something that I try and emphasise is that people don't always think the same way" (8/5/03). This is an important understanding for children to develop given the emphases in these classrooms on thinking and collaborating.

The teachers worked hard to develop students' confidence in themselves as learners and thinkers. The children were encouraged to share their personal opinions with others and they were also expected to listen to and make sense of their peers' explanations about things. They were also encouraged to learn from other childrens' questions and comments. The teachers know that students' confidence levels affect the way that they participate in learning. As Gail explained;

> One boy finds it very hard to do anything - English, maths, science, whatever - without me sitting down beside him and doing it for him effectively. Somehow I've got to work on that so that he's got the confidence to have a go himself, take that risk and be brave. (18/2/03)

Alongside mutual respect, *risk taking* is another norm that is developed in these classrooms. The teachers understand that getting students to talk more about what they are thinking and why, and working more with others, is increasing the risk for many students. David explained that even expressing yourself can be risky; "It's going from self-talk to getting it out from your brain and actually saying it out loud" (12/3/03). The children were encouraged to get in touch with their own thinking, and share what they were thinking and why, by using talk in an exploratory and tentative way. Nancy explained that it is about "changing the mindset from one which says, we don't speak until we know the answer, to using talk to help us make sense of what we're thinking" (12/3/03). The teachers deliberately use a lot of partner and small group work as a way of increasing confidence, for as they said, "It is risky to say what you want to say without at least rehearsing it with a good friend or within a small group." (Nancy and David, 12/3/03). Gail explained that this is the reason she let some children choose to stay together sometimes in groups;

> Those particular groups of girls...they're also not risk-takers so I think each of those girls would have felt it was really important for them to stay together so that they would have the confidence to have a go at the task. (18/2/03)

The teachers also shared some of their own learning experiences with the children to develop the notion of taking risks. For example, Nancy and David reported back on a professional development session they had attended on The Arts. David had found it easy but Nancy had found it difficult. They shared this with the children and Nancy said how she made lots of mistakes. David came in with 'Mrs Shaw did it tough. She could have got her car keys and left but she didn't.' (observation, 12/3/03). By sharing this, the students also received other messages about learning such as 'working outside of your comfort zone, it's okay to make mistakes, sticking with it even if it's tough'. The messages were conveyed that learning is challenging and that perseverance is important. Nancy also deliberately made mistakes sometimes in front of both the children and parents, because as she said, "I think you can turn it around to a really good lesson about having a go" and "It helps to make them feel comfortable, for them to realise that we make mistakes" (11/2/03). She explained that this was a different attitude for her; "Once upon a time I would have felt so embarrassed if I had made a mistake and they picked me up on it".

The teachers gave clear, consistent messages to the students about what they valued, in the way they responded to incidents, both planned and unplanned, which occurred in the classroom. Nancy and David, for example, wanted students to take responsibility for their level of understanding, so when they introduced something new they asked "who understands what they need to do and who doesn't?" They then congratulated those children who indicated that they did not know for being honest and they did this publicly to send a clear message. (observation, 17/6/03). The teachers were aware that their response might have been different to what some children were expecting based on previous experiences. This point is best highlighted by an incident that happened in one of the classrooms towards the end of second term. There was a new boy in the class who had the reputation of being a

'runner', in that when he was confronted for anything he would just run away from school. His behaviours in the class also indicated that he was finding it challenging being in the classroom! (observation, 24/6/03). On this particular occasion, David had had to talk to him several times and then a number of children came up and said he had been throwing things. When David called him over and asked him about it, he initially denied it. So David rephrased the question by saying "Let me put it this way, there was some throwing going on and I want to know what you were doing. But before you answer, think, people make mistakes but we value honesty in this room." At that point the child nodded, indicating that he had accepted responsibility. David replied with "Okay well that's great, that's what we value in this room, honesty." (observation, 24/6/03)

In all of the classrooms, children knew what was expected of them, how to conduct themselves and what they needed to do. They did not have to 'guess what's in the teacher's head'. The initial emphasis of each of the teachers was on developing a safe, trusting and positive environment in which effective learning could occur.

2/ Renegotiating students' roles and responsibilities

As has been mentioned, the teachers in this study were very aware that their students came to school with varying attitudes and commitments towards learning. They also that this meant that both the students and their parents/caregivers had different expectations of the *roles* of teachers and learners. The principals reinforced this point in their interviews too, noting that many of their families held traditional views of schooling. As one of them said, "Lots of children come to school with the notion of what is work and what is the teacher's job and what is my job..."(Carol, 8/5/03).

The teachers therefore talked to the students openly about their perceptions of the roles of teachers and students in the teaching-learning process. They then renegotiated roles and responsibilities, based on the notion of shared control of the learning process. The teachers encouraged the students to take an active role in their own learning and also contribute to the learning of others.

One of the ways that the teachers developed the notion of 'shared ownership of learning' was in providing students with choices. In all of the classrooms students were encouraged to take an active role in making decisions about their learning and to what degree this occurred depended on many factors, not the least being the skill and age level of the students. For example, in Nancy and David's Year1/2 class, each day began with a 'student managed curriculum' in which students chose, from a selection, which tasks they wanted to complete and in which order. In Chris's Year R/1/2 classroom, students were encouraged to share their interests and ideas with her and others. While in Gail's Year 6/7 class, students were given the freedom to plan and organise what they wanted to learn, where this learning might take place, how they should present their learning and the criteria against which their learning should be judged (observation, 8/5/03).

The teachers also provided choice around how students might engage with a task.

The following example explains the thinking behind one of the teachers giving the students the option of working individually or in pairs;

> I really value collaborative work and cooperation. I will almost always give the opportunity to work with at least one partner. But I do recognise that there are times when you might be brimming with ideas and actually want to work as an individual, so often I will give that option as well. And there are compromises. You can work with a partner, share ideas but do your own work as well. (Gail, 3/3/03)

The teachers clarified new responsibilities that came with the students' increased involvement in their learning, including time management and personal management. David & Nancy explained;

> Kids take on a level of responsibility - just getting their heads around being organised and committed to time. And thinking 'what do I need to do within that time to be successful? (9/4/03)

Another way that teachers developed the notion of 'shared ownership of learning' was

ensuring that the students experienced the consequences of their choices by holding them accountable for the decisions they made. Nancy explained;

> You can't make children do anything they don't want to...You give them choices and then make them realise that they are doing the choosing, but there is a consequence for their choice. So you say to them, if they don't like the consequences of that choice, 'But I didn't make that. You chose to do that'... (11/2/03)

Holding students accountable for their decisions applied equally to choices around behaviour as well as academic choices. Teachers worked with the students to ensure that they were aware of the choices they made. For example, a child in Nancy and David's class had to explain his choice to his mother after school. When his mother asked why he had not finished his work, his reply was 'Because I made the wrong choice. I decided to muck around' (observation, 11/2/03). Gail explained that as a class, they often talked about making 'good choices' given that "One of our classroom rules that we established this year was about making good choices in things we say and do" (3/3/03). Teachers also worked with students to learn from the choices they made. Chris described her approach to conflict resolution as 'rather than having me decide who's to blame or who's not to blame, trying to get children to talk to each other about what happened and how it happened and what they could do next time' (12/2/03). The students were thus encouraged to take responsibility for their behaviour and were involved in making choices about more appropriate behaviour.

The teachers were very clear that they wanted to increase students' responsibility for their learning and hence increase their engagement and participation in the learning process. But they were also clear that it was a 'shared ownership' of the teaching-learning process as they were mindful of balancing student interests with system curriculum requirements and balancing the choice of one child with the needs of the group. Therefore they set boundaries around the choices they provided for both work and behaviour. With regard to work they said; " There is not choice in that work will be done" (Gail, 26/5/03) and "We put some non-negotiables in" (David, 12/3/03). With regard to behaviour, students were provided with more

and more limited choices, until the point when teacher choice sometimes took over from student choice. This is best exemplified in the following example, when a student had made the choice to continue with disrespectful behaviour in the 'learning zone' and so had been sent back to his table. When he went back to their table, he was still presented with another choice: "You're at your table. You can choose to think about it and you are most welcome back or you can choose to practise this at lunchtime" (David, 12/3/03). If disrespectful behaviour had continued, then other consequences would have been applied, as David explained;

> We would say, 'Now, we've got not choice. We are responsible for 50 other children in this room. Now we have no choice but to ask you to go to buddy class or over to the office, or meet with your parents...You need to think about the impact that you are having on the choices for the rest of the children in the room'. (David, 12/3/03)

The notion of 'shared ownership of learning' applied also to the role that they all played in each other's learning. Students were encouraged to see themselves as part of a team, making a contribution to each others' learning as well as their own. At different times, they adopted a variety of roles including "peer support, fellow teacher, expert, leader" (observation notes). Students acted as peer support for each other in the many partner and small group activities that were used. The students provided each other with emotional support, for example when they were struggling with a particular learning task and social support, for example, helping to resolve an argument amongst group members. They also provided each other with intellectual support. This included asking questions to help the other person share what they were thinking, or elaborating on an argument or explanation. It also included asking challenging questions to enable their peers to develop their answers more fully or to be able to see things from a different perspective. Sometimes it was providing a range of support, as indicated in the following acknowledgement by Chris; "Whoever was working with Justin would have had to work hard just to keep him on track, as he's easily distracted" (8/5/03).

There were times too when the teachers asked particular children to take on more of a leadership role and provide more active support for some students;

> For example, Alison, Chris and Kate this morning. I had little private talks with them about leadership and modelling to the other children and responsibility and attitudes and what they could do. (David, 26/2/03)

In negotiating new responsibilities, teachers deliberately asked questions such as What do you need to help you learn? How can we help you learn? How can you help others learn? (observation, David & Nancy, 26/2/03). Being asked these questions positioned students differently in regard to the learning process. They had some control over saying what they needed to help them learn, rather than having someone else decide for them. Similarly, being asked about how you could help someone else learn can be empowering, as it can change one's thinking from an egocentric focus to a realisation that you have something to contribute to someone else.

Even though the children were being asked to collaborate with others, the teachers still wanted them to have their own opinions and to take responsibility for their own views. For

example, in one session in David and Nancy's classroom a human graph was used, where the children physically moved into a line according to the extent that they felt quality work was important. 44 elected for quality is very important and 3 elected for quality is not important at all. The three children were affirmed for making up their own minds and not voting with the rest (observation, 7/5/03).

The teachers once again gave clear, consistent messages to the students about how they wanted them to work in their new role as partners in learning. They aimed to empower the students. As one of the principals commented on what he saw happening in the classes of the teachers involved in the study; "I see those teachers giving more and more power to students who are not powerful. They don't come with confidence" (Peter, 7/5/03).

3/ Explicit teaching of social skills and processes

The teachers regarded it as a high priority to support students to interact effectively with each other and so they spent considerable time on explicitly teaching the skills and processes that enabled each student to participate in learning with others. This involved an emphasis on students developing the skills of speaking clearly, listening, asking questions, responding, negotiating, co-operating and so on. The students were then provided with many opportunities to practise these skills, as for most activities they were encouraged to work closely with one or more of their peers, and to pool their expertise and questions as they tried to solve the problems they encountered as learners. The teachers also worked with the students to develop their understandings

of what it means to work in a pair or in a group. As Chris said;

> I think group work needs to be explicity taught so that the children know that it's not one person doing all of the work or one person having more of the input but that it is two, three, or four people working together for a group outcome (15/5/03)

Chris also gave the following example to highlight the challenge of getting young children to understand what working with a partner means. She asked her children to work with a partner to make a list of things that they thought needed to be bought for the classroom. She found when she was going through the list with the partners a few of them could not say what was written down because they had not discussed them, so she then needed to "teach the skills about checking out with a partner" (8/5/03).

All the teachers also emphasised that there is a need for explicit teaching of skills and routines required for self-managed learning. For example, "We acknowledge that time needs to be spent on direct teaching or modelling of specific skills to be an independent learner" (David, 11/2/03).

Gail explained the benefits of having had an explicit focus on the development of social skills and processes;

> We have spent a fair bit of time in the first term of this year working on social learning, how to work as a team, how to work as a partner, how to share, how to listen, how to carry out responsibilities, how to anticipate, and I think we're seeing the

> fruits of that labour now in that they are independent, not entirely, but reasonably so, and they do show initiative, do have confidence and can assertively say what it is that they'd like to learn about and in what way they'd like to learn about it. (8/5/03)

4/ Explicit teaching of metagcognitive language, skills and processes

In these classrooms there is an explicit focus on the learning process. Teachers talked openly about learning and the students came to know what thinking is, what learning is and the different processes involved in learning. For Nancy and David, this involved talking to the children about how the brain works, identifying what kind of thinking is happening and teaching about emotional intelligences (11/2/03). Gail and Chris also highlighted their focus on thinking and reflection;

> We do a lot of thinking. Our focus is to identify the sort of thinking that you're doing at the moment. So sometimes we are thinking mathematically or scientifically. But we might also be thinking creatively, fluently, flexibly. (Gail, 12/2/03)

and:

> I've talked really about giving children ... time to reflect on what they're doing and giving them the language to talk about what they're learning. And critical thinking about what it is they're doing and saying. Having conversations around that... (Chris, 12/2/03)

In these classrooms, there is an emphasis on using, and helping students to use, explicit language that supports their learning. Chris, for example, introduced her Year R/1/2 students to the terminology used to describe the 'Essential Learnings' (from the South Australian Education Department curriculum document) that underpinned her curriculum (12/2/03).

Teachers named behaviours, virtues, processes, and so on and used these constantly with the children in order to develop a shared language for learning. For example, in David and Nancy's classroom terms such as 'decision-making' and 'negotiating' were introduced to the children and then used constantly in different situations. Children were encouraged to 'think about your decision-making' and were asked 'what decision making did you do?' (observation, 9/4/03). The teachers explicitly taught skills such as how to rephrase, question and clarify and then provided opportunities for the students to practise these skills with their peers.

The aim of using metacognitive language and processes is to help students to talk about their learning, reflect on their learning and further their learning. One of the school leaders explained;

> We need to support students to know themselves as learners and as metacognitive learners. They need to know what thinking is, what learning is and the sorts of different processes of learning.

(Deborah, 9/4/03)

Students then learn how to explain their thinking, elaborate on their responses and pursue further avenues for learning. In this way, students are further able to take control of their learning. They learn not just to work together socially, as previously mentioned, but also intellectually.

5/Renegotiating the teacher's roles and responsibilities

As for the student role, there was a need for the teachers to clarify and renegotiate their roles. The teachers provided support for students in ways that acknowledged that children were being asked to participate more actively in the learning process, than they might have been used to or expected. The nature of this support varied and required them to adopt a variety of roles, including the roles of facilitator, manager, explicit teacher, coach and counsellor. (David & Nancy, 19/5/03). But whichever role they adopted, the teachers realised that they needed to be consistent with their students in *how* they supported them in their learning. For example, "They know by now that I won't solve it for them. I'll help them solve it but I won't do the work" (Gail, 18/2/03). Here again, the messages they sent about students being responsible for their learning needed to be clear and consistent.

The teachers worked with students in ways that supported and challenged them as learners. One of these ways was by explicit teaching, as has already been identified. Explicit teaching was also used, when deemed appropriate, when learning tasks were first introduced. Teachers used explanation, demonstration and the use of models and scaffolds to assist them. However, when students were engaged in learning experiences, the teachers promoted their sense of ownership and responsibility by taking on a facilitative/responsive role, rather than a directive one. As students worked at tasks the teachers circulated talking to individuals and groups.

They closely monitored students' performance on tasks and supported them through individual or group discussion. Chris highlighted the difficulty she has at times in trying to decide which role to play;

> I'm torn between wanting to interact with the children and talking to them and questioning them and moving around and having a piece of paper and a pencil in my hand trying to write it all down...to keep track of what they're doing. (15/5/03)

Gail explained why she is very active when children are working on group tasks;

> To get an understanding of what current understandings are. Because so often we assume what we think people know and understand. To also explore and help students explore their own understanding by questioning and perhaps focusing their attention on particular aspects. Challenging students to prove the facts they came up with or at least support their ideas. And to generate and maintain enthusiasm as well. (17/3/03)

The teachers posed probing questions, sought clarification and additional information and offered encouragement. They encouraged students to elaborate on answers, Why do you think

that? How do you know? They coached students to do this for each other. The teachers also adopted this coaching role to support students interacting assertively with their peers. For example, in one of the classes, when the children formed a 'sharing circle' where all the children came together on the carpet, one of the girls did not fit, so initially she just stood there. Nancy coached her with 'What do you need to say?' which prompted a reply of "Please move so I can fit in." and the other children did (observation, 17/6/03).

The teachers' responding skills were critical in supporting students to share their ideas and thoughts. For example, David providing encouragement for a student to elaborate on an answer; 'I'm not sure what you mean. Take a minute to think it through' (observation, 9/4/03). Even when the teachers received correct answers to their questions they often continued to ask for further comments to ensure that children were not merely 'guessing what the teacher was thinking'.

The teachers viewed one of their roles as engaging students in meaningful dialogue about their learning such that it had the potential for extending and challenging their thinking. In other words, they co-constructed knowledge with the children. To do this, they needed to know each of their students very well. Chris explained the challenge; "Trying to be aware of each individual child's level and what their need is and trying to meet that in some way" (13/3/03). She also explained that it was about being able to recognise successes, no matter how small they may appear to be. For example, "Jessica until now would tend to stand and cry because she didn't have scissors (which were needed for the task). But at least now she comes up and asks me for them" (10/4/03). The teachers took advantage of opportunities where students were working on open-ended, collaborative tasks, to observe their students at work, to gain knowledge about each child. As Gail explained;

> I found the lesson intriguing. The observations I made were fascinating. I learned a lot about various people's understanding of space and three dimensions. I now have to think about where that leads us and how we can move people along from where they are currently, to a better understanding of using space. (Gail, 3/3/03)

Sometimes when children were not engaging with the task, the teachers found that they needed to be more directive. For example, in a task which required students to work in groups of fours, with each child allocated a particular group role, David noticed that a child was not doing anything and the other three children in the group were. David directed a question to the Manager of the group "Alex is here without a job. You need to give Alex a job. What could he be doing while you are cutting that out?" (observation, 5/3/03). Here, David supported the student to make the ultimate decision and at the same time, supported the allocation of group roles. Another example relates to the point made earlier about reasons for different levels of engagement; Gail explained;

> There are some students whose commitment to learning isn't very great and they're the students who need help in selecting a manageable chunk so that they see success. So, if I work with them and help them to choose something that is achievable then they're more likely to be committed over a shorter term, achieve success and then are able to roll over into some other task...(8/5/03)

Another role the teachers often played was that of learner. They regularly shared their own learning experiences and learning processes with the children and they were also quite up front with their children about the fact that in many situations they were learning alongside their students. For example, in Gail's classroom she regularly shared with her students her excitement and curiosity about particular learning tasks, as occurred when they were exploring a possible mathematical relationship between number of tiles and number of possible tessellations. Gail did not know in advance whether they would find a pattern or not, but showed a great deal of enthusiasm for the possibility (observation, 15/4/03).

It can be seen that the teacher's role was definitely not a traditional one. Perhaps it might best be described as "fellow learner, enquirer or co-collaborator"?

6/ Being a reflective teacher

The final element of these classrooms pertains more specifically to the teachers themselves and the attitudes they have to being a teacher. Rather than holding an expert notion, they certainly see themselves as learners too. The fact that they are prepared to acknowledge themselves as learners in the classroom attests to that but another indicator was their willingness to engage in this research study. This was also obvious by their commitment to the Learning to Learn project. These teachers all demonstrated a willingness to think about their teaching and engage in new learning,

The teachers were prepared to reflect on their teaching and learning and then make changes to their pedagogy as a result. These comments from their principals support this; "I've seen significant growth in their practice but also their reflection and their questioning of what they're doing..." (Carol, 8/5/03). This principal also commented on the change she had seen in this way; "Rather than saying the child has got this problem, (the teachers asks) what is it that I can do to change what I do to support the child?". The two other school leaders made the following comment; "They're both learners and they've both gone through significant change, we've seen great change, they are different" (Peter and Deborah, 7/5/03).

As a result of actively reflecting on their teaching and learning, the teachers were very self-aware. They recognised that they valued an enhanced student voice in their classrooms, by way of more active participation in the learning process. They understood that implementing this would challenge the traditional attitudes around the roles of teachers and that it would not only be challenging for the students but also for themselves. For example, Nancy, who has been teaching for over thirty years, explained: "I have to work hard everyday to use the language, and not fall back to the old ways...You have to remember to phrase things around learning" (observation, 30/4/03). They also set themselves continual challenges in their teaching. For example, "It's a challenge everyday to engage as many children as possible and to enable me to spend as much time as possible with those children who need support" (Gail, 8/5/03).

The teachers engaged in a level of critical reflection which involved them not only confronting old assumptions around teaching and learning generally, but also confronting new assumptions around participation. They noticed that children reacted differently to the invitation to participate more actively in the learning process and so they continually reflected on the levels of participation and the implicit structures, assumptions and relations operating in the classrooms that might be interfering with the learning process. They then made changes to their practices. This process is illustrated by the following response to a

question about how they knew about how much to involve the children initially. David replied;

> We were asking far too much. We were asking for too many decisions to be made...We've learnt to scale it down to make the tasks achievable. We've given them structure. (9/4/03).

One of the outcomes of being reflective is being able to articulate what you are trying to do. These teachers are clearly developing their confidence in this area, as evidenced in their conversations with us during the research, but also as indicated in their conversations with children, parents/caregivers and each other as colleagues.

As Chris said; "It's about being explicit about what it is we are doing and why we are doing it" (12/2/03). And David and Nancy emphasised that they needed to have many conversations with their parents/caregivers about why they teach the way they do. David explained;

> As I often say to the parents when having those New way vs Old way conversations, 'We are educating your children more then ever for jobs that do not yet exist. We need to help them understand how to learn independently'. (document, 15/11/02)

The teachers all highlighted the role that the Learning to Learn project had played in developing their confidence to talk about their teaching as indicated by the following comments; "You can't do this unless you are exposed to like we were with the Learning to Learn project, we've been to a lot of different inputs including brainbased things, emotional intelligences, relational learning and so on" (Nancy, 19/5/03) and

Gail; "I attend as much of the Learning to Learn stuff that I can reasonably lay my hands on...I find the ideas very challenging" (12/2/03). As well as being exposed to new thinking, they were encouraged to have conversations with their colleagues to share meanings and help them make their understandings explicit. These conversations often challenged previously taken for granted assumptions around teaching and learning and provided teachers with opportunities to investigate the congruence between their practices and beliefs. The principals confirmed the important role of the Learning to Learn project; "It's been a resource that's given us time to actually have space to have conversations" (Carol, 8/5/03) and "It gave opportunities to spend time reflecting with other teachers around practice and why you do certain things" (Deborah, 7/5/03).

It can be seen that the teachers in this study implemented new processes and structures in their classrooms, consciously and thoughtfully.

Discussion: Transforming Classrooms by developing a learning culture

Although the teachers themselves were reluctant to describe themselves as constructivist teachers, they clearly subscribed to a social constructivist view of the world, where;

> Learning is understood as a process embedded in social relationships and cultural practices, a situated practice within a community of learners (Toohey, 2000) rather than a process of

> individual acquisition transmitted by an expert. (Groundwater-Smith, Ewing & Le Cornu, 2003, p. 79)

This study has provided some insights into how these teachers developed a learning culture based on this view. The teachers emphasised the importance of shared interaction, collaboration and negotiated meanings and also regarded the development of language as playing a crucial role in learning. There was an emphasis on participation and engagement and on "pedagogies of co-construction...with their emphasis on reflecting, building, inquiring, talking, writing and project-centred learning" (Holt-Reynolds, 2000, p. 22). We agree with Holt-Reynolds (2000) who argued that;

> These pedagogies project a teacher who is able to use personal expertise and authority as the teacher to develop a classroom culture that invites and values student participation in intellectual tasks. (p. 22)

This study has illuminated the following characteristics of constructivist learning cultures; intellectual engagement, student participation, student ownership of learning, metacognition and co-construction.

This study has also highlighted the paradoxical nature of the role of a teacher who is committed to developing such a learning culture in their classroom. The teachers were involved in deliberately 'blurring the boundaries' around the roles of teachers and students in attempting to establish a learning community - one based on reciprocity between learners. At the same time, they needed to be very explicit in what they said and did and have very clear expectations about the different roles of teachers and students, to enable different participation patterns to be enacted. Underpinning this process are the notions of reciprocity and explicitness.

Reciprocity

The teachers in this study deliberately changed how students were positioned in regard to the learning process and how they participated in the learning process.

There was an emphasis on the reciprocal nature of the learning process and the development of reciprocal ways of working. Rather than being seen as something that was done *to* them, with all of the power invested in someone else, there was an acknowledgement that students had a role to play in their own learning and indeed, that of others as well. Students were given a voice in regard to their learning and encouraged to be involved in the process of learning *with* others.

The move to a reciprocal way of working in the classroom had implications for how the roles of teachers and students were played out. There was a 'blurring of boundaries' around the roles of teachers and students in these classrooms. The teachers and students played alternating roles in the learning process in working together to develop greater autonomy in the learner. Students also adopted teaching roles in working with their peers. Teachers and students, and students and students, related much more in partnership with one another than in traditional, more hierarchical relationships. Such a move, as we have seen, is crucial to the establishment of a classroom culture more conducive to learning. This is in keeping with Fried (2001) who wrote;

> The opposite of command and control is a genuine learning partnership, one that requires of students and teachers a level of shared responsivensess that goes against the traditional hierarchy of school. Such mutuality will be critical to the emergence of learner-centred schools in the future. (p. 136)

The teachers in this study were mindful that classroom learning is mediated through the reciprocal interplay of social interactions between all of the members of the class, so their first priority was to build a climate of trust based on mutual respect for all participants in the learning community. Taylor (2002) emphasised that such a "culture of trust" is needed for successful collaboration and that a reciprocation of trust needs to be built between peers or between peers and leaders. The teachers in this study clearly worked on this. It was obvious that whatever the teachers expected of the children, they reciprocated. For example, the teachers expected the students to listen to them and each other, so they made sure they listened to the students. This also worked in reverse, so for example, when students initiated ideas for learning, the teachers took these up.

The teachers knew that in order for students to be more active in the learning process, they needed to *feel* more powerful. They also knew that in order for them to feel more powerful, they needed to be immersed in an environment that helped them to feel this way. That is, the relationships, processes and structures all played a part in determining whether students felt empowered or disempowered. Recent work on emotions in teaching from a social constructivist framework helps to understand this interplay. Hargreaves (2000) emphasised the need to understand and explain the ways that emotions exist *between* people, rather than viewing them in personal, psychological and individual terms. He stressed; "Emotions are located not just in the individual mind; they are embedded and expressed in human interactions and relationships" (p. 824).

The teachers in this study worked hard to ensure that the myriad relationships that existed within their classrooms were ones that maximised participation for all students. This meant taking account of 'the multiplicity of the positions that operate within a classroom' (Allard & Cooper, 2001, p. 154) and understanding how the inevitable power relationships that exist in any classroom affected the level of participation. With the 'blurring of boundaries' that occurred in these classrooms, came a redistribution of power. This occurred in the establishment of more democratic relationships - teachers used a "power with" mode of relating with students rather than a "power over" (Downing, 1995) and expected students to do the same.

There was also a more subtle aspect that emerged, which highlights a point made by Schrage (1990) in writing about the "new technologies of collaboration" (p. 1). He argued that successful collaboration requires a high level of cognitive involvement by participants, as well as a preparedness by them to contribute to the creation of a shared understanding. Developing a learning culture therefore which values a sharing of the learning process, requires students to have a preparedness to contribute to the learning process and a preparedness to contribute to one another. The students are positioned much more powerfully than in the traditional culture. The level of collaboration for which teachers aim in a learning community can only be attained if students are willing to reciprocate. They can choose to adopt a particular attitude that relinquishes personal responsibility. Therefore, in establishing a learning culture, it is not just a question of 'How much will the teachers 'let go', but also, how much will the students 'take on'?'

Thus, understanding the establishment of a learning culture is to appreciate the interplay between teacher and student and students and students. Understanding power relationships in classrooms has gained increasing recognition in the last decades and builds on the work of Foucault (1980) and Giddens (1984), to name just a few. These theorists examined power relations as "ongoing, dynamic interactions played out among all participants" (Allard & Cooper, 2001, p. 155). There is a general acknowledgement that classroom cultures are actively constructed by all concerned (Allard & Cooper, 2001; Mc Naughton, 2001). That is, they are underpinned by the notion of reciprocity.

Explicitness

What this study has highlighted is that when teachers want to work in different ways with students, it is not just about *establishing* a learning culture, although that is part of it. It is actually a reculturing process. Teachers and students have to rethink, refocus and redefine roles and responsibilities. Windschitl (2002) explained why this is such a challenging task;

> For teachers, creating patterns of beliefs and practices consonant with a constructivist philosophy is especially difficult when one considers the entrenched school culture that it must usurp. The predominant images of "being students and teacher" are some of the most persistent known in the social and behavioural sciences (Sirotnik, 1983; Tyack & Cuban, 1995). (p. 150)

This dimension was certainly evident in this study. The students did not come with neutral views and attitudes towards school. They had expectations around schooling, which were influenced by their parents/caregivers, whose views were based on their own experiences of a much more traditional system.

Given that what they were trying to do was very different to that with which most students (and parents/caregivers) were familiar, the teachers needed to be explicit in everything they did. The teachers therefore had to play a key role in the reculturing process. A common feature amongst the teachers in this study was the level of explicitness. They did not make assumptions about what teaching and learning would look like in their classrooms, but rather they attempted to make it all very clear to their students. They held high expectations for learning and intellectual engagement and conveyed these to the students in the early weeks of working with them. They introduced new participation structures by providing clear expectations for how students would participate in lessons. This is important because;

> Being a competent member of the classroom involves learning when, with whom, and in what ways to talk and knowing when and where to act in certain ways. (Mehan,1997; Nguyen, 2002 cited in Windschitl, 2002, p. 150).

The teachers also developed, with students, shared understandings of various learning processes and provided support for students' engagement with them. What was notable is that they were also very explicit about the nature of that support and gave clear, consistent messages about who was ultimately responsible for the learning. They also promoted diversity by acknowledging the individual ways that children think and learn. Recent studies have affirmed the importance of "high support" cultures for learning (Marks, Doane &

Secada, 1996; Newman & associates, 1996; Lingard et al, 1998). Marks et al (1996), for example, found that students felt most positive about classroom environments in which they assisted each other and where they felt encouraged to take intellectual risks. A similar finding was reported in the Lingard et al (1998) study, which highlighted four interconnected dimensions (or productive pedagogies) of classroom practice; intellectual quality, connectedness, supportive classroom environments and recognition of difference.

The teachers in this study explicitly taught students how to interact with each other - both socially and intellectually. This is important because a number of recent studies have highlighted some problems with collaborative activities where discourse is valued as a way to help students make ideas explicit, share ideas publicly and co-construct knowledge with others (Windschitl, 2002). These include students not wanting to work with their peers (Slavin, 1995, cited in Windschitl, 2002), interpersonal dynamics working against group sense-making and the negotiation of meaning (Taylor & Cox, 1997 cited in Windschitl, 2002) and students discounting or dismissing the individual contributions of others (Anderson, Holland & Palincsar, 1997 cited in Windschitl, 2002). Windschitl (2002) concluded that teachers "must develop strategies for socializing students into new ways of dealing with peers as intellectual partners (Hatano & Inagaki, 1991) and be vigilant about students' influences on one another's thinking" (p.147).

This study has also highlighted another level of explicitness at a more personal level. In order for the teachers to be explicit with the children, they needed to be explicit with themselves. In other words, they needed to understand themselves and their patterns and how they respond and they needed to be clear about what they value and what assumptions they make. They then needed to be prepared to reflect on and critique their practices. The Learning to Learn project provided opportunities for these teachers to do that. The teachers actively involved themselves in a learning process that required them to rethink and reframe their ideas around learning and student participation, so that they could redefine roles, renegotiate responsibilities and redistribute power. It has been well established in the teacher development literature that the role of learning communities is to provide "intellectual opportunities for teachers" (Cochran-Smith, 1991) to think deeply about themselves and their work. The aim is to enable teachers to ultimately change practices and social relationships in the classroom and schools, to maximise participation for all learners (Darling-Hammond, 1993; McLaughlin, 1997; Cochran-Smith & Lytle, 1993, 1999; Lieberman, 2000). These teachers are doing that.

Most recently, Cochran-Smith (2003) stressed that engagement in learning communities involves teachers:

> ...both *learning* new knowledge, questions and practices, and, at the same time, *unlearning* some long-held ideas, beliefs and practices, which are often difficult to uproot. (2003, p. 9)

This notion of 'learning and unlearning' was very evident for the teachers in the study. The teachers, in learning to involve students more in the learning process, were often asking questions of themselves and each other. This was most evident in the conversations around choice and boundaries and roles and involved letting go of some often long held beliefs. They also acknowledged the challenges they faced in responding in 'new' ways including, for example, remembering to use the language of learning. What was also apparent in this study was that the notion of 'learning and unlearning' was equally applicable to the children. The

children, too, were required to often unlearn old ways of responding as 'a student' before they could relearn new ways of responding as a 'learning partner'. The teachers were very aware of this and it was demonstrated in the ways they responded to the children, which was often more of a coaching style, rather than a telling style. Ladson-Billings (1994), in her work with successful teachers of African American children, has highlighted the importance of teachers building on students' varied cultural bases, discourse patterns and conceptions of what schooling is for. She wrote; "culturally relevant teachers recognise that education and schooling do not occur in a vacuum" (Ladson-Billings, 2000, p. 210). The teachers in this study certainly demonstrated this awareness.

Conclusion

This study has shown that developing a learning culture, one that values intellectual engagement, student participation, student ownership of learning, metacognition and co-construction, is not easy. It requires much relearning for both students

and teachers and as such it is actually a reculturing process. The teachers in this study are actively engaging in this reculturing process and we want to publicly acknowledge their courageous efforts. We use this term deliberately because Windschitl (2002) reminded us that "reconceptualizing the classroom as a constructivist culture is a risk-taking venture with political implications" (p. 154). By political, he draws on Delpit's (1995) and McLaren's (1989) reference to those aspects that are linked with the exercise, preservation, or redistribution of power among students, parents and other participants in the educational enterprise.

Whether or not the teachers in this study would describe themselves as constructivist teachers is a moot point, for again, quoting from Windschitl;

> The most effective forms of constructivist teaching depend on nothing less than the re-culturing of the classroom, meaning that familiar relationships, norms and values have to be made public and be critically reevaluated (Fullan, 1993; Joseph et al, 2000). (p. 164)

The teachers in this study renegotiated roles, relationships and responsibilities to optimise student participation in and student ownership of learning.

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