Teacher Enquiry as a Tool for Professional Development: Investigating Pupils' Effective Talk While Learning

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Abstract

The Learning to Learn in Schools Phase 3 Evaluation was a four year project across England exploring the concept of Learning to Learn in 33 primary and secondary schools. The project was funded through the UK based Campaign for Learning. One of the key aims of the project was to ensure that the locus of control in terms of development remains with the schools, who decided on the focus of innovation relevant to them under the umbrella heading of Learning to Learn. A team from the Research Centre for Learning and Teaching at Newcastle University then supported and facilitated the teachers in the systematic evaluation of their experiences. As a result we believe that this process supported meaningful professional development about teaching and learning. This paper exemplifies this process through two professional enquiries into pupil talk in the classroom and how it supported learning. The projects were carried out by teachers in two schools, one secondary (11-18 years) and one primary (4-11 years). Both schools decided that encouraging pupil talk about learning best fit with their priorities and the project aims of exploring Learning to Learn. The paper describes the different research methods and findings of the teachers'

research, focusing on the decision making which occurred and how the process of the research has impacted on their professional development. Conclusions are drawn about how the philosophy of Learning to Learn can be as easily applied to the process of professional enquiry through action research and teachers' learning, as to the more traditional domain of students' learning and how this might contribute to the development of a successful Learning to Learn school culture.

Introduction

The Learning to Learn Phase 3 Evaluation was a research project funded through the Campaign for Learning[1] and facilitated by the Research Centre for Learning and Teaching at Newcastle University, UK. The aims of the project were similar to the Australian project which shares the same name (Le Cornu & Peters, 2005): to foster greater understanding of the learning processes in schools, to motivate and develop teacher knowledge about learning and to encourage learner reflection about the process of learning to learn (Higgins et al., 2007).

The English project involved 33 primary and secondary schools in three Local Education Authorities (LEAs), representing a wide range of socio-economic contexts (for further information see Higgins et al., 2005, 2006, 2007). All of the schools implemented interventions under the general umbrella term of Learning to Learn (L2L). Working definitions of L2L draw on ideas of metacognition, thinking skills, self-regulation, self-efficacy and self-esteem (see, for example, Claxton 2002). However, within this project, definitions remained fairly flexible since one of the outcomes of the project was to develop new understandings of what Learning to Learn is in practice through the process of enquiry which the teachers themselves were undertaking (reported in Higgins et al., 2007 and exemplified in Baumfield, Hall, & Wall, 2008). The starting point for this discussion was taken as the Campaign for Learning definition:

> …a process of discovery about learning. It involves a set of principles and skills which, if understood and used, help learners learn more effectively and so become learners for life. At its heart is the belief that learning is learnable. (Higgins et al., 2007, p. 13)

This project was therefore based in the belief that the teachers' learning and development is central and an enquiry approach was therefore adopted (loosely based on action research methodologies, see Figure 1, for further information see Baumfield et al., 2008). Moreover this approach was one in which the teachers identified their own research focus as well as their own intervention methods. The locus of control was firmly in the teachers' domain rather than that of the research

team. The project placed importance on the teachers' intent and the tools which supported the enquiry process Baumfield et al., 2008). Using Stenhouse's (1981) model of "systematic enquiry made public", the teachers were encouraged to initiate changes they felt were appropriate and then the University team supported and facilitated their enquiry, giving advice on existing research evidence which was likely to be helpful and possible research techniques in terms of collecting data, analysing results and writing up the projects.

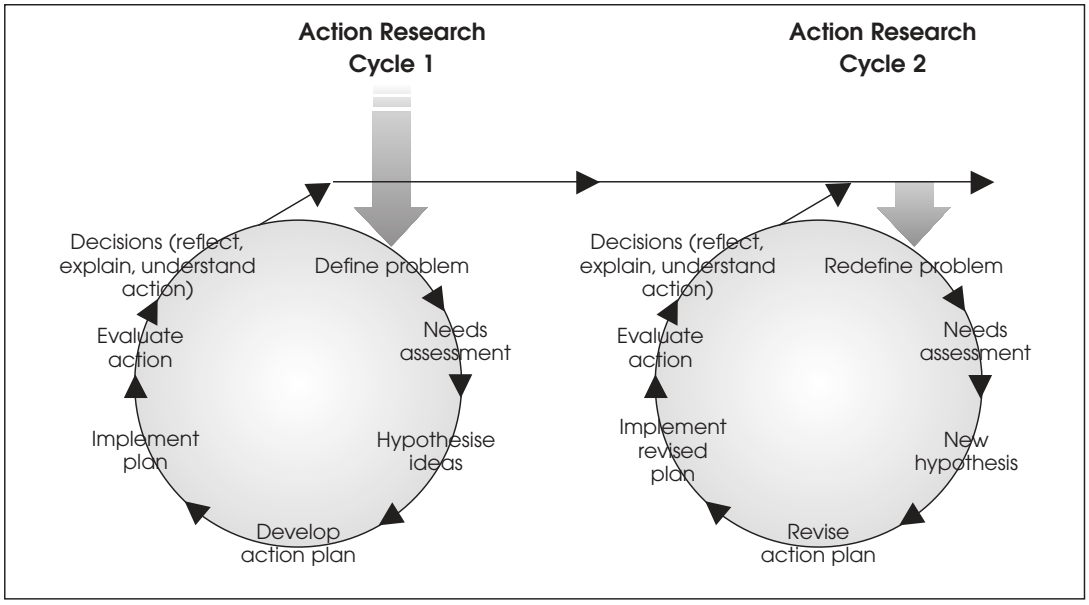


Figure 1: Diagram showing the cycle of enquiry used, adapted from Kemmis and McTaggart (1988)

Support materials were published on a password protected website to which teachers had access. On-line assistance from a University-based project manager was also available. In this way the project tries to engage with and problematise Hammersley's (2004) assertion that action and research in education are conflicting processes. In fact, this strategy emerged as empowering for the teachers and, as a result, can be seen as a powerful and effective means to support professional development (Wall & Hall, 2005). In addition, as common research tools were introduced to the different enquiries in schools, then conclusions could also be drawn across the whole sample nationally (Higgins et al., 2007); thus becoming a persuasive tool for influencing practice and policy.

Our understanding of teachers' experience of learning through enquiry and collaborative networks has been examined from a social-constructivist perspective (Hall, Leat, Wall, Higgins, & Edwards, 2006), building on work supporting teachers in developing pupils'

thinking (Leat & Higgins, 2002). We find evidence of the "mirror effect" whereby interventions designed to impact on student learning enable teachers to benefit: so that their learning shares the characteristics of that of the intended outcomes for the students (Wikeley, 1998). The shift from performance orientation to learning orientation in pupils impacts on teachers so that they also manifest greater persistence and flexibility (Le Cornu & Peters, 2005), plus the capacity to work more effectively in solving difficult problems (Dweck, 1986) in their own pedagogical practice.

Within this paper, two case studies are highlighted from this much larger project. These case studies have been chosen as the teachers have chosen to investigate different aspects of pupil talk, one in a secondary school (11-18 years) and one in a primary (4-11 years). It is important to recognise that the teachers have chosen these approaches relating to talk as fitting with *their* beliefs about Learning to Learn. There were other case studies completed by other schools in the project that focused on talk, indeed in the project as a whole talk about learning has been a recurrent theme (Higgins et al., 2007), however, these two cases were chosen as they also used complementary research methods, primarily a comparison of classes using L2L techniques with those that did not, and comparable tools to investigate these innovations which they perceived should be incorporated under the L2L heading.

It is important to recognise that this paper has been written collaboratively between the University and the teachers. The schools are not anonymous and the thematic comments from the University team have been discussed and validated with the teachers involved prior to publication. The L2L project and the approach outlined above are committed to ensuring the teachers' voices are heard, so their accounts appear largely unedited[2].

School Contexts

Fleecefield Primary School is situated in the heart of Edmonton in North London. Most of the children live on the surrounding estates and in the high-rise blocks of flats. The area has high unemployment rates and large numbers of immigrants and refugees. Fifty-four percent of the children in the school speak English as an Additional Language. There are 37 different languages spoken in the school. Seventy-nine percent are from a minority ethnic background. The school has 44% of its children eligible for Free School Meals (FSM) and 28% identified with Special Educational Needs (SEN), including 3.3% with a statement for those needs (this statement details the requirements and support to which a pupil with SEN is entitled, sometimes involving additional adult support).

Fallibroome High School is a successful and popular, co-education comprehensive school situated in Macclesfield, Cheshire. At the time of this research, it had 1467

students, including 260 in the sixth form, 3.7% Special Educational Needs 2% Free School Meals and very few pupils with English as an Additional Language. Attainment on entry to the school was above average and this was maintained or improved, with very strong results at Key Stage 3 (ages 11-14), Key Stage 4 (ages 14-16) and Key Stage 5 (ages 16-18, which is reflected in sustained A or A* scores in the Performance and Assessment (PANDA) reports from the Office for Standards in Education (Ofsted). The reports give an overview of each school's performance in relation to other schools using data from Ofsted, the Department for Education and Skills and the Qualifications and Curriculum Authority (QCA). The reports are designed as a management tool to help schools develop and implement plans to raise standards. The intake of the school reflects a wide socio-economic spectrum and reports suggest most parents are pleased with the school because of its high expectations and high attainment.

Rationale for Involvement in the Project

Fleecefield became involved with the project through its work with the Edmonton Education Action Zone (EAZ). The school has a reputation for its inclusive nature and part of the reason for its success is its belief in learning for adults and children alike. This has created an environment in which new approaches are tried and adapted to improve practice. The L2L Phase 3 Evaluation has therefore fitted in well with this ethos. The teacher-researchers decided to focus on paired learning because they wanted to improve pupils' communication skills, their interpersonal relationships and their academic achievement. It was felt that paired learning would complement current practice.

Within Fleecefield the children speak 37 different languages. Their home and community environments vary greatly from each other and this can lead to cliques forming. Most classes have children with vastly different needs and because of this, exploration of different ways of closing or reducing the real and perceived gap between their actual attainment and their potential is paramount. The work of Geoff Hannon (1991) was influential in developing the school's ideas. He has outlined how paired learning can be used to great effect in secondary schools: by mixing up the children every lesson into different pairs and groups, where the quality of the children's verbal and written responses can be improved. His work showed that, not only had this enabled children to improve through practice of their own ideas and knowledge, it had also improved relations between the children and broken down some of the gender and status issues that become a regular feature of children's school experience.

In a similar decision-making process, Fallibroome chose co-operative learning as the main focus of their action research project because it complemented and extended the school's existing model of teaching for learning. As part of their Network Learning

Community (NLC) teachers from Fallibroome and its partner primary schools were sent to the USA to attend the Learning Brain Expo®. Through this experience, two primary colleagues received intensive training on the work of Dr. Spencer Kagan (see for example, Kagan, 1992, 2001). This was disseminated across the NLC and Fallibroome chose to investigate how these strategies would work in the secondary context. A further factor influencing the decision was that it appeared to offer a way to develop learners' individual accountability and equal participation. This reflected the school's vision of creating independent lifelong learners able to cope with a rapidly changing future.

It was felt that co-operative learning offered a way of delivering the content of the curriculum in a varied and interesting manner. It consists of a set of structures that can be adapted to any lesson which promote more engagement and interaction between students, thus moving away from the model of the teacher at the front controlling all aspects of the lesson.

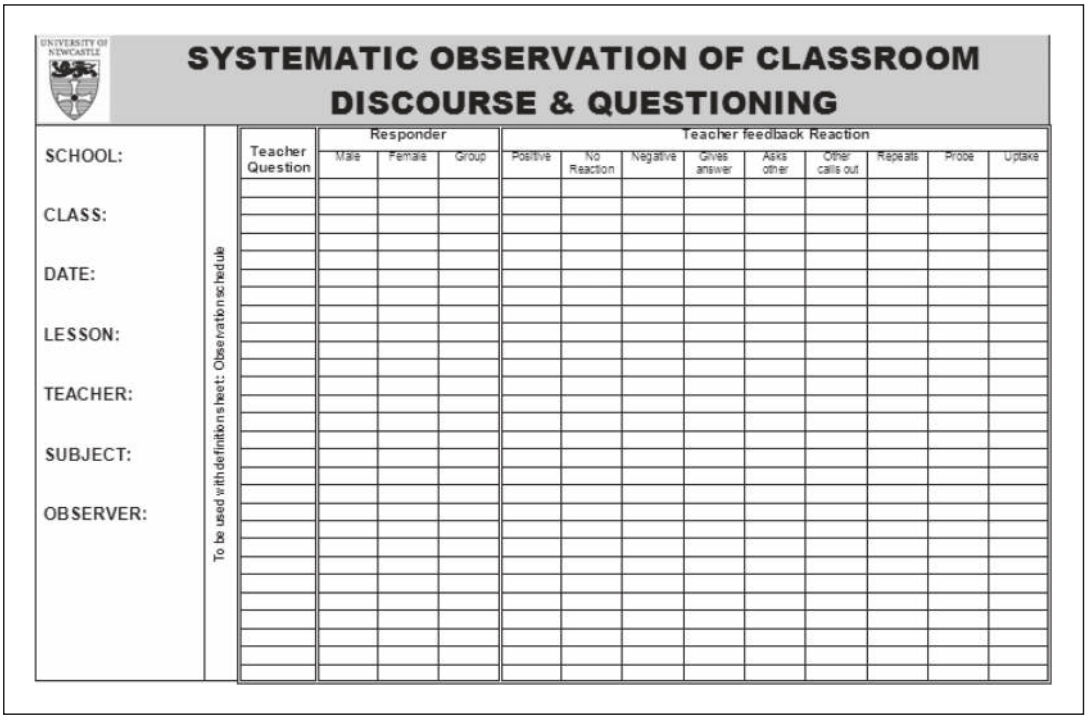
Individual School Research Projects

Each of the schools' projects will be reported in turn, using the teacher's voice as it was written at the end of the first year of the project; it is felt that this is important in communicating the research and learning experiences that were completed as part of the professional enquiry process. In each of the schools there were one or two teachers involved in the more formal aspects of the research process (such as in attending meetings and writing up their work) and it is their perspective and their understanding of their learning which is reproduced here (edited from their Year One case studies). In some of the schools the development work in classrooms was undertaken by more staff according to each of the schools' priorities and focus for development. The reasons for their involvement varied. Some teachers chose to be part of the project, others were chosen by the headteacher.

Fleecefield Primary School: Does gender, ability and friendship focused paired work create a more articulate, emotionally safer environment and improve children's academic performance?

The school felt that the project and the introduction of L2L innovations would encourage an attitude to learning which would make the children more prepared to learn; that would help them to become more resourceful and independent in their learning and assist the development thinking and talk about the process of learning. The work focused on the two Year 6 (10-11 year olds) classes, with one following paired learning (Lilac Class) and the other following current school practice (Indigo Class).

To ensure that the project remained manageable it was decided that one of the research partnership should be released for one day a term to observe the same literacy lesson in both the classes. This teacher would make observations on the kinds of questions used by the respective teachers, i.e. open or closed, and who responded to those questions. These observations were completed using the template below. A particular focus was the balance of answers between genders and also whether the children volunteered their response or whether it was solicited. The imbalance in participation in primary classrooms, particularly in whole-class teaching, according to gender and ability is well-established in classroom interaction (e.g. Myhill, 2002; Smith, Hardman, & Higgins, 2007)



SYSTEMATIC OBSERVATION OF CLASSROOM DISCOURSE & QUESTIONING

SCHOOL:

CLASS:

DATE:

LESSON:

TEACHER:

SUBJECT:

OBSERVER:

To be used with definition sheet: Observation schedule

Teacher Question	Responder			Teacher feedback Reaction								
	Male	Female	Group	Positive	No Reaction	Negative	Gives answer	Asks other	Other calls out	Repeats	Probe	Uptake

Figure 2: Observation sheet used to gather evidence about questioning in the two classes

It was also decided that it was important to establish what kind of talk was going on during the task time of the lessons when the teacher had less direct input on the conversation. Whether there was a sharing of ideas and support and whether or not the children were talking on or off task (see Figure 4).

To complement the observations a "pupil views template" was used (Wall & Higgins 2006; Wall, Higgins, & Packard, 2007), which enabled the children to express the kind of talk they had been involved in. It was presented to the children in the same way

in both classes using the same language, asking the children to reflect on the lessons from that morning. These were the same lessons which had been observed to ensure that direct comparisons could be made.

In addition, interviews were completed with twelve of the children. A range of children was chosen, which reflected the diverse nature of the school. This method aimed to find out whether or not the children could verbalise their experience and what they reflected had happened to them in the morning sessions and to their learning in school more generally.

The qualitative data was triangulated with some quantitative data, drawing on the relationships between the teacher assessments of their literacy levels at the end of Year 5 (9-10 year olds) and at the end of Year 6 (10-11 year olds). The projected national tests results based on Key Stage 1 results and what they actually achieved at the end of Key Stage 2 were also collected and a comparison was made between the achievements of the two classes. In England all pupils are tested at ages 7 and 11 in English, mathematics and (at age 11) science, the project focussed on their learning in literacy in terms of reading and writing.

Fallibroome High School: Does using co-operative learning techniques improve engagement and confidence among the students about their ability to learn and make them more aware of the learning process itself?

The school's objectives were to help the students become more resourceful about their own learning and more ready to use their peers to help them rather than relying on the teacher. The staff wanted students to develop the capacity to cope with "being stuck" and to develop the social skills involved in forming teams and working with others. Through improving levels of interaction in lessons it was hoped to encourage students to become more engaged with their learning.

Given that the L2L Phase 3 Evaluation contributes to the wider teaching for learning agenda, including projects in our partner primary schools, Year 7 (11-12 year olds) was chosen as the focus cohort to maximise the potential cross-phase benefits. Moreover, the school wanted the teachers involved to feel able to innovate and try out strategies and it was felt that they might be more reluctant to do so with a group approaching external tests or examinations. The model of a lead learner receiving intensive training over a year had previously proved successful and so this format was adopted as part of this project. The longer-term benefits would be that each department would then have an advocate for co-operative learning, who would be able to give practical advice, tailored to the specific subject, once the project was extended to the whole school.

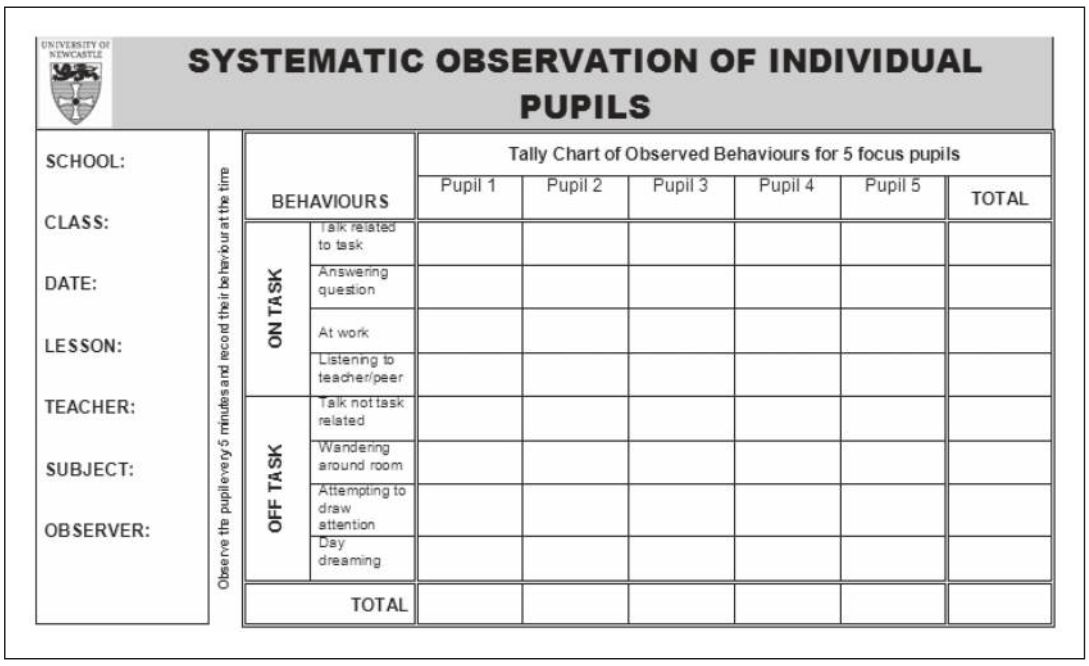
The research evidence collected included data from staff, students and lesson observations. The purpose of the evidence collection was twofold; firstly, to assess whether students in co-operative classes demonstrated higher levels of engagement and confidence; and secondly, to assess staff attitudes to the co-operative structures and to the format of their training. By including evidence from staff, students and lesson observations it was hoped to provide several sources of data. The aim of such triangulation was to enhance the reliability and validity of our findings.

One of the initial hypotheses was to assess how the adoption of L2L approaches influenced teachers' motivation and their capacity to manage change. Specifically, this was whether the longitudinal model adopted would prove effective in maintaining the momentum towards a sustainable change in practice, creating advocates for the strategies who would feel able to guide other staff. To provide evidence to assess this, the teachers involved were asked to complete a questionnaire and their feedback from each training session was also recorded.

The hypothesis for the student-focused aspect of the research was whether L2L approaches support the development of confident and capable lifelong learners and, if so, how. It also sought to assess the nature and impact of different learning environments on achievement, with environment taken to mean the layout and groupings of the classroom. To gauge these factors students completed a project questionnaire which investigated their attitudes towards learning. Focus group interviews were also conducted with a sample of students to discover their reactions to co-operative learning lessons.

Evidence from lesson observations came from a student tracking exercise in which four students were observed in co-operative and also in traditional lessons. In this exercise the observer recorded what each of the four students was doing at five-minute intervals during the lesson. To supplement this, an LEA adviser used her monitoring visit to observe four co-operative classes with a focus on the following:

- Challenge;
- Engagement and time on task;
- Learner-centred activities; and
- Assessment for learning.



SYSTEMATIC OBSERVATION OF INDIVIDUAL PUPILS

SCHOOL:
CLASS:
DATE:
LESSON:
TEACHER:
SUBJECT:
OBSERVER:

Observe the pupil every 5 minutes and record their behaviour at the time

BEHAVIOURS		Tally Chart of Observed Behaviours for 5 focus pupils					
		Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 5	TOTAL
ON TASK	Talk related to task						
	Answering question						
	At work						
	Listening to teacher/peer						
OFF TASK	Talk not task related						
	Wandering around room						
	Attempting to draw attention						
	Day dreaming						
TOTAL							

Figure 3: Observation schedule used to compare co-operative learning lessons and 'traditional lessons'

Results

Fleecefield Primary School

The quantitative data collected demonstrated clearly that both classes had made excellent progress throughout the year. However, it should be recognised that it is difficult to prove the children in different classes would not have made the same or similar progress with the other teacher or approach. As a result it was felt the qualitative data and children's comments offered another indicator of the impact of paired learning on the children in Lilac Class.

Information on the children's performance at the end of Year 5 was collected as assessed by their teachers. Although all staff moderate children's assessments together and use the same National Curriculum level descriptors, there is an element of subjectivity about teacher assessment that must be considered when looking at any results. The difference in progress between the two classes is quite marked, however, as can be seen by the charts below. Additionally a review of the reliability and validity of teacher assessments in the UK (Harlen, 2004) indicates that studies of teacher assessment and national tests showed broad agreement and that the clearer teachers were about the goals of students' work, the more consistently they applied assessment criteria. National Curriculum requirements in England entail regular teacher assessment in reading and writing as well as formal national tests in both of these areas at age 11 outlined above.

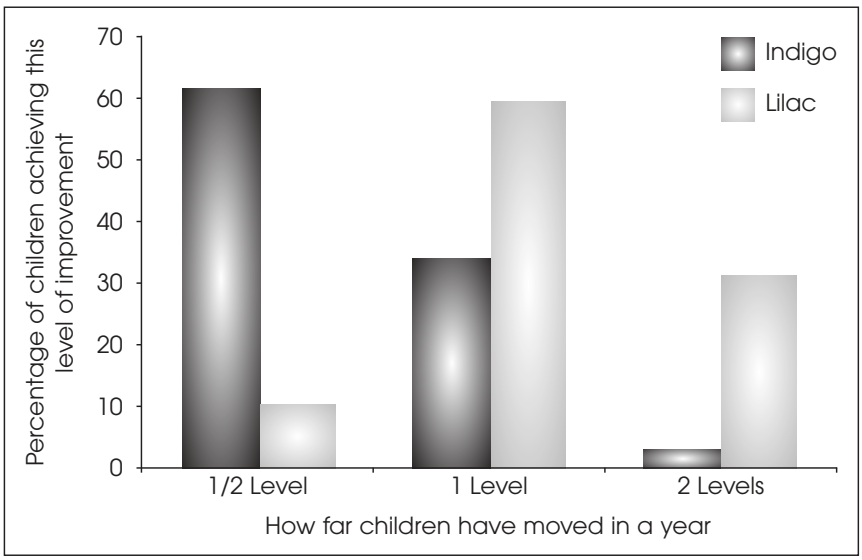


Figure 4: Children's achievement in reading from Year 5 and 6 as measured by teacher assessments

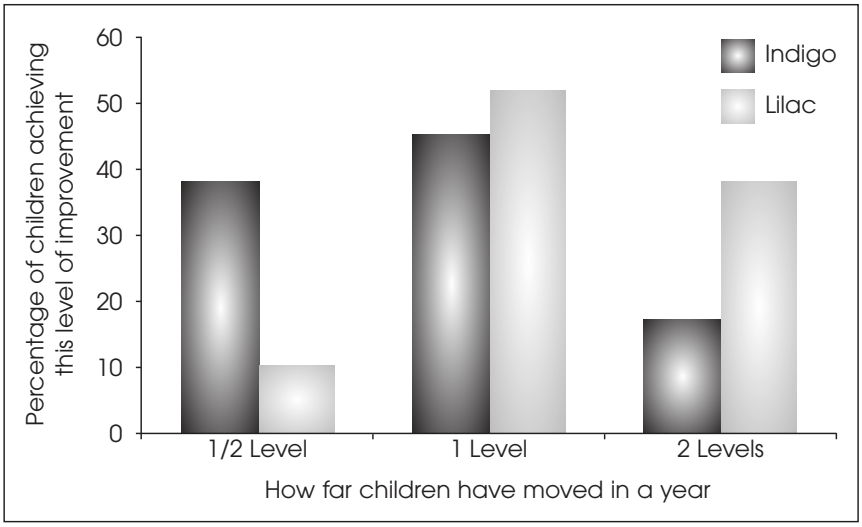


Figure 5: Children's achievement in writing from Year 5 and 6 as measured by teacher assessments

The difference in the classes is largest in reading but there is also a difference in writing. These differences show the greater progress more children in Lilac Class have made compared to their counterparts in Indigo Class.

However, when national test data for the classes was looked at a different picture emerged. It can be seen that although both classes made excellent progress, when

compared with projected achievement Indigo Class have made the greatest progress in writing. Both classes have made equally good progress in reading with a 21% improvement on the Key Stage 1 target. These results can be seen in the graph below (Figure 7). It is not possible to draw conclusive findings as to the benefits of the paired learning technique from these data. It may be that, although Lilac class made more progress in the course of the year when using the paired approach, it was not a significant factor in their overall improvement (compare with Indigo class) during the four years between testing at Key Stage 1 (aged 7) and the end of Key Stage 2 (aged 11), particularly in terms of achieving the national test benchmark of level 4 in the national curriculum. This indicates the complexity in measuring achievement in the short and longer term in education.

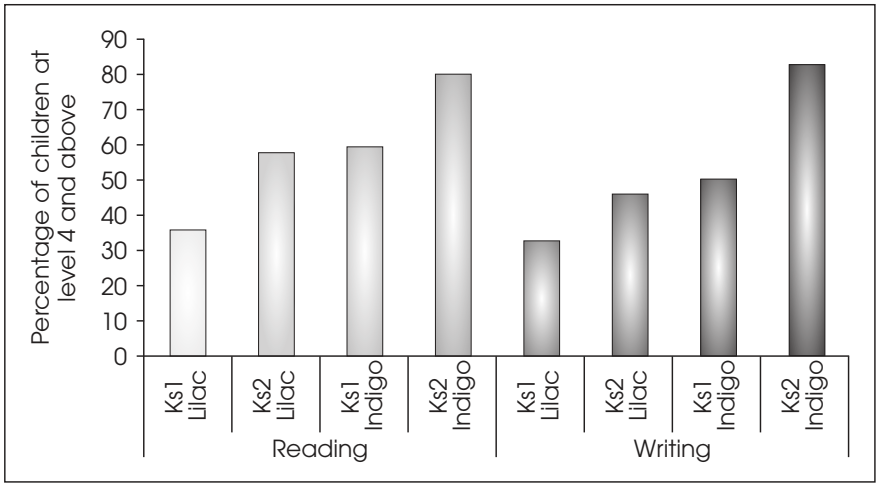


Figure 6: Projected SATs results and actual SATs results for Year 6 2004

There is, however, a very different picture painted by the data collected using the observations, the interviews and the Pupil Views Templates. Here, a different picture of the impact of paired learning was perceived.

Observation of the teacher's questioning to the whole class showed both teachers favoured open questions and that in Indigo Class there was a greater predominance of girls answering the questions. This was not the case in Lilac class where the spread was more equal; indeed in Lilac Class there was evidence of pairs working together to answer a question, thus fitting in with the paired talk philosophy.

These findings were complemented by a second observation examining the children when they were actually working on a task. This observation monitored whether the talk was on or off task and how often the children engaged with others to aid their work. A marked difference in the two classes was evident from this observation.

Indigo Class chose to work individually and when they worked in pairs were observed to talk to their partner only once during the whole session, a total of 38 occasions for the whole class. They exhibited 14 incidents of off task work or talk. One child was even noted reading a completely unrelated book, rather than the task at hand. Lilac Class was a different story. Here 79 occasions of on task, shared talk behaviour were observed and, in comparison, only two instances of off task talk in the entire session.

As part of the interview, comments from children in Lilac Class showed a greater understanding of the learning process:

> (Working with other people) makes it a bit more easier I think, if you need help and if you work together, it seems like you get it done quicker.

Whereas, in Indigo Class when they were asked about what was good about the activity, they did not talk about the learning situation but the content of the lesson:

> Basically just like listening to the book and writing about it because it's a very long story, so you really have to listen hard.

The clearest picture of the children's thinking came from the Pupil Views Templates. Both classes were asked about the morning's literacy lesson and to imagine that the two children in the picture had been in that lesson, what might they have said and thought? The difference in responses was very clear.

In Indigo Class none of the children's responses on the template referenced the lesson on "Goodnight Mr Tom"; instead making comments such as:

> Hmm, what's that number on Amelia's worksheet. I'll never pass if I do it myself.

It appears they were predominately concerned with passing tests and many of the thoughts they ascribed to the template were about rewards or unrelated activities like football and discos. An example of this association between grades and rewards can be seen in the template completed by a child in Indigo Class included above. In addition, there was little or no interaction indicated between the two children and where thoughts were related to the other child, they seemed in competition with each other.

In Lilac Class all the templates reflected the lesson they had participated in that morning. The characters in it were conversing with each other and working together. They made explicit references to how they were working things out and who was responsible for the various roles within their partnership. They also ascribed value to their partner in their thoughts and some mentioned how it enabled them to achieve or enjoy the work:

> Do you need help? OK lets work together.

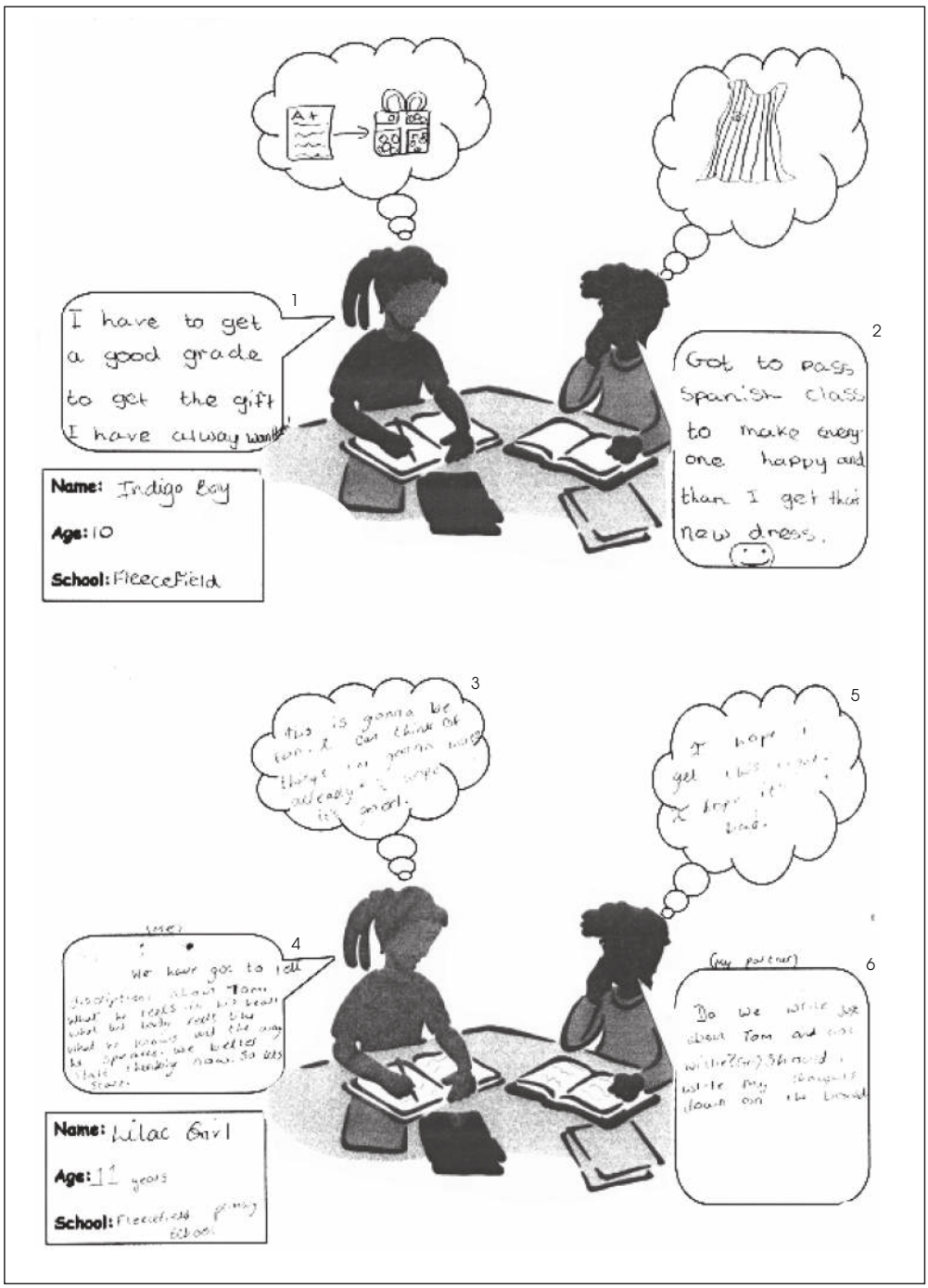


Figure 7: Examples of pupil views templates (template of child from Lilac class on bottom)

Footnote
1 I have to get a good grade to get the gift I have alway wanted
2 Got to pass Spanish class to make everyone happy and than I get that new dress
3 This is gonna be fun. I can think of things I'm gonna write already. I hope it's good.
4 (me) We have got to tell discriptions about Tom. What he feels in his heart what his body feels like what he knows and the way he speakes. We better start thinking now. So lets start.
5 I hope i get this right. I hope it's not bad.
6 (my partner) Do we write just about Tom and not Willie? (yes) Should I write my thoughts down on the board.

It was felt by the teachers that this showed, when asked specifically, Indigo children did not talk about their learning, and did not learn from their peers. By contrast paired learning in Lilac Class had created an environment where this kind of talk and explicit knowledge about how you work, your strengths and weaknesses is required.

Fallibroome High School

The staff questionnaire revealed a positive response to the project and demonstrated the amount of time and care that the participating teachers had committed to the research. Their considered and reflective responses will be used to inform planning for the future dissemination of ideas to the rest of the staff.

Co-operative learning techniques place great emphasis on team building and class building. In the primary context this can be easier but presents a real challenge in the secondary context where teachers in some subject areas might only see their Year 7 class (11-12 year olds) for two or three lessons in the two week timetable. One of the results of the research is that it has started debate about the rigid divisions of the Year 7 curriculum and whether these students should have fewer teachers who would therefore see them more often and get to know them better.

Another obstacle identified was the time taken up by the emphasis on team building, meaning that not all staff had managed to cover the required Year 7 Programme of Study (PoS) which is part of the statutory National Curriculum. The teacher who was most concerned about this nevertheless made the following points in a review of a lesson incorporating co-operative learning techniques suggesting that the balance between curriculum coverage and in-depth learning needs further investigation:

> This lesson worked better than in the past.
>
> I had more time to go round the groups.
>
> The co-operative element meant that more sensible/thoughtful answers resulted.
>
> Many pupils were involved in feedback/scribing.
>
> I was less concerned this time that everyone wrote down answers – the process is now seen as more important.
>
> By going through the answers as a class, everyone could see how the mystery could be solved.

The concern about the classroom environment can largely be explained by the fact that many teaching rooms were shared, meaning that the teachers had to negotiate a preferred layout to the classroom between themselves. In some cases teachers not

involved in the project preferred a horseshoe layout or rows rather than the tables of four which best suit co-operative strategies. Furthermore, rooms such as the ICT suite or laboratories present specific difficulties because of their fixed layout. Similarly, in drama or Physical Education, for example, the teacher has to give prior thought to how they can deliver lesson content through the medium of co-operative strategies.

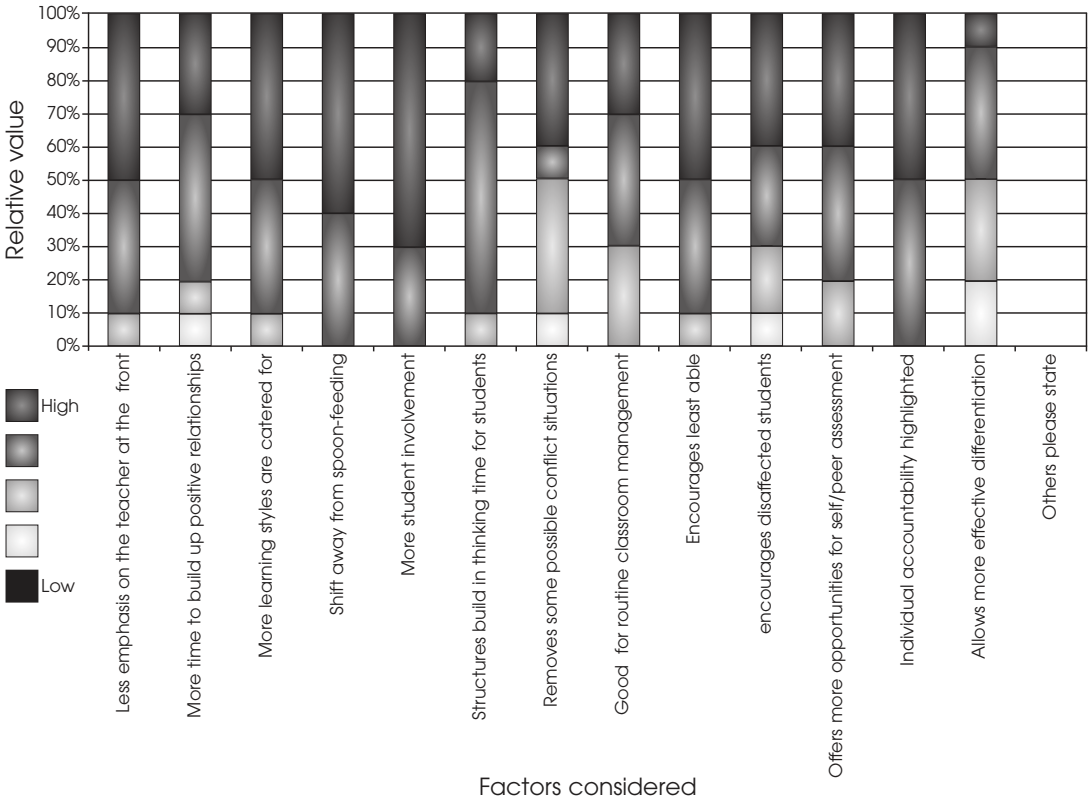


Figure 8: Perceived benefits for teachers

Having considered the obstacles, assessment was needed of the benefits both to teachers and students. The participating teachers' views on these are summarised in the graphs (figure 9 and 10). It was encouraging to see the preponderance of high or very high ratings and it was felt that the identified benefits to both staff and students represent a vote of confidence from the teachers involved, despite their awareness of the challenges that remain to be overcome.

Overall there were many indicators of the positive impact of collaborative learning approaches observed in lessons with the majority of pupils engaged, on task and supporting each other's learning. Pupils appeared to spend time in lessons learning from each other and being involved in a variety of activities as independent learners.

Pupils are very aware of their individual learning preferences which help them make effective contributions to the variety of roles possible in group activities. Strategic grouping of pupils in lessons offers a level of challenge to the majority of pupils in the groups. A real sense of enjoyment and fun ran alongside the learning and progress which was evident in the lessons observed. Positive interaction between pupils and between teachers and pupils was also observed.

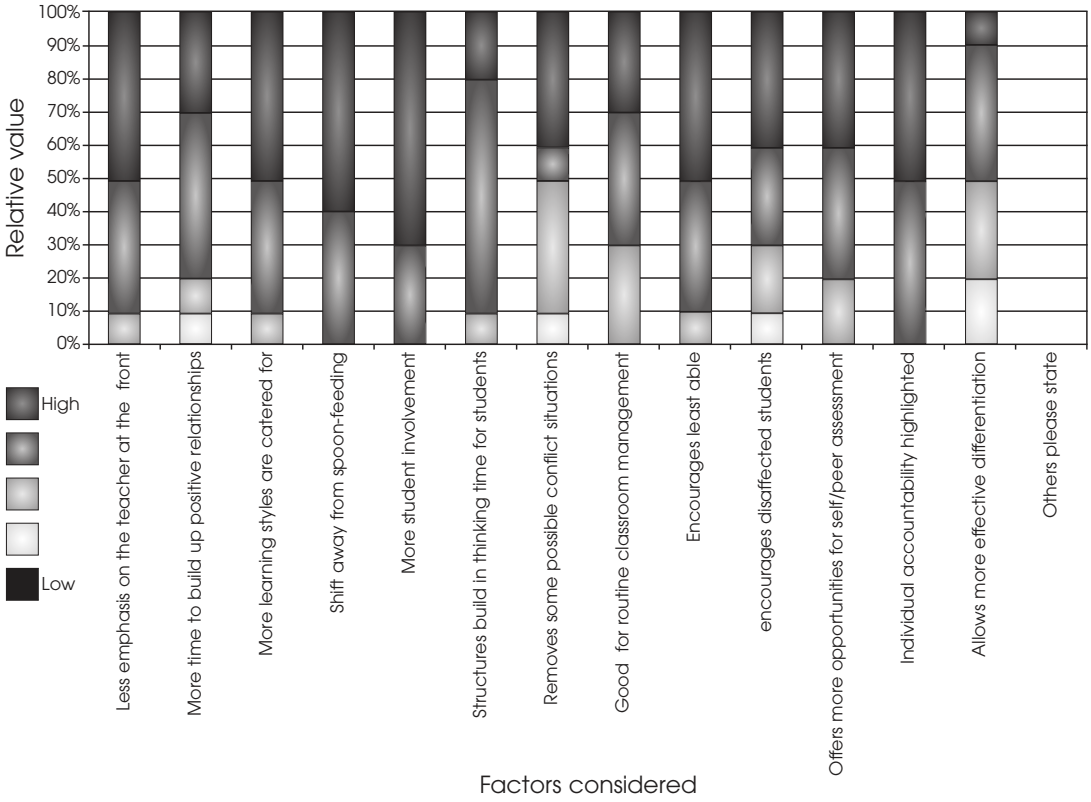


Figure 9: Perceived benefits for students

The "traditional" lessons were more teacher-centred and students spent more time listening to the teacher and so perhaps were less actively engaged. The scores for praise from the teacher and peers seem disappointingly low in both situations but can be explained to some extent by the format of the tracking exercise. Nevertheless, it had been anticipated there would be more evidence of praise from peers in the co-operative classes because team celebration of shared successes is an important aspect of the philosophy behind co-operative learning. This aspect has therefore been identified for further attention.

To gain an insight into the student perspective, a sample of five students from a class which had had four teachers using co-operative structures was selected. Students were asked to reflect on various issues by completing thought bubbles on a prepared sheet. They were asked how they felt in co-operative lessons, whether they were different to other lessons and why they thought the teacher wanted them to work like this. In addition they were asked about what happened if they were stuck, about praise, on-task talk, thinking time, and if they felt self conscious in the team. Finally, they were asked if they would recommend that other teachers adopt this approach.

All of the students were positive about co-operative lessons and perceived the value of working in teams. All of them highlighted the social benefits of making new friends and being able to work with different people to share ideas and they saw these as the main reasons why their teachers had chosen this approach. One of the students came close to identifying some of the key aims identified at the beginning of the project:

> I felt more comfortable in the teams because we all contributed something to the team and didn't say anybody was wrong. I think that working in teams has made me contribute more in class as it was a team answer. I prefer working in teams.

The student who made this comment highlights the confidence building aspect of co-operative structures, namely that it was safe to answer because it was a team answer, but also the individual accountability that any member of the team might be called upon to answer.

Four of the five students mentioned peer support as a major advantage of teamwork:

> It helps a lot as we can talk to each other and eventually get around the problem.

One student didn't feel that teams were especially helpful when stuck. The same student made a point about competitive students feeling self conscious:

> I didn't feel self conscious, but I thought that some people did due to the more competitive atmosphere.

The same student also expressed the following view:

> Sometimes when we are working in rows I feel as though I have more free rein over my work, as I don't have to include others' ideas into it.

A similar issue about lack of individuality arose from analysing the students' comments about praise. They associated the co-operative lessons with praise from peers and did not feel that this occurred in "traditional" lessons:

> Usually in team groups the whole class thinks of some praising words, then if someone does something well the rest of the team praise them with one of the words. So there's a lot more praise.

However, one student reported that:

> In team lessons praise sometimes doesn't feel particularly rewarding, as it is extended towards the whole team rather than to the individual.

A positive aspect to the students' comments was that they all agreed that there was more on-task talk in co-operative lessons and that more people had the opportunity to contribute to the lesson. Concerning thinking time, the students said they had more time in co-operative lessons and were also able to describe how it was structured:

> We get 10 seconds to think on our own. Then we discuss it with a partner and then with the team. So we get quite a long time to think before sharing our answer to the class.

Finally they were asked if they would recommend that more teachers used the co-operative strategies. All of them responded that they would, as can be seen from the comments below:

> I think that being in a team is a really good idea. I contribute much more, I'm not self conscious and think other teachers should do it too.

Further evidence came from a student tracking exercise which recorded what students were doing at five-minute intervals in lessons using co-operative structures and traditional lessons. The aggregated results of the tracking exercise are shown in the figure 10.

Some students appreciate the value of teamwork but associate it with competition. Many of the structures are active and can seem like games, so, particularly when first learning them, their most obvious application seems to be as starters to make the beginning of the lesson fun and engaging. However, two of the lead learners subsequently went on a five day intensive course about co-operative learning at the end of the year and now feel that it is important to stress the balance between very active structures, "calm-down" structures and more discussion based ones. This refining of our understanding of the potential of the structures will be ongoing through the second year of the research project.

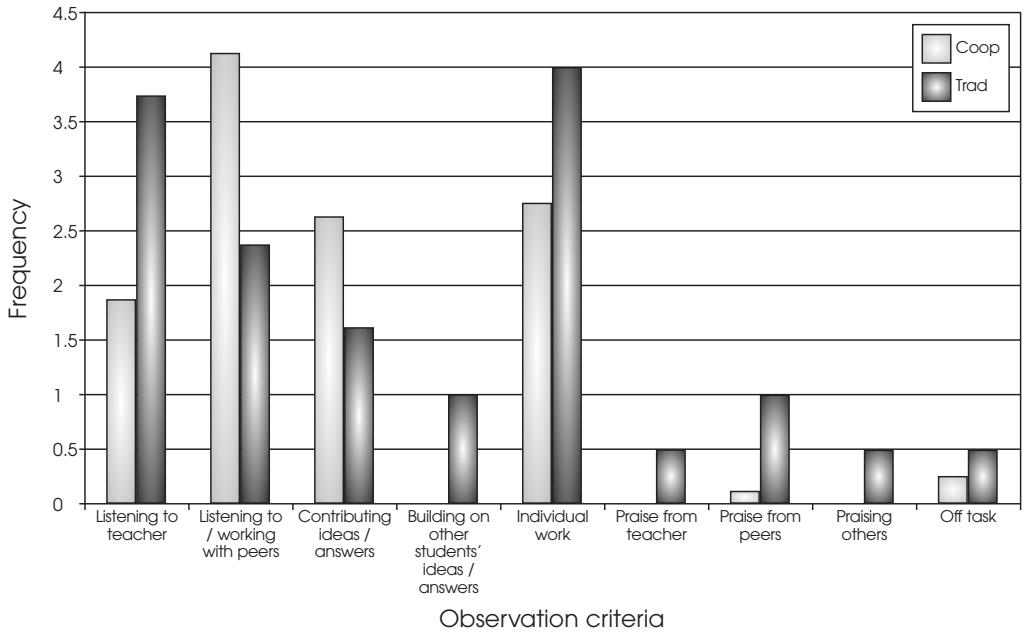


Figure 10: Results from pupil tracking: comparing co-operative learning lessons with traditional lessons

School Development as an Indicator of Impact

Fleecefield Primary School

The school's participation in the Learning to Learn Phase 3 Evaluation has afforded the teachers not only the time to focus on paired learning but also the permission to develop particular areas of professional interest. The training days and conferences were perceived as providing excellent support in the organisation of the project. These were annual events run by the University research team and the Campaign for Learning. Twice a year the teachers met locally for a day to learn about learning to learn approaches, to plan their projects, and to develop their research skills. Once a year all of the teachers met at a national two-day residential conference with workshops and keynote addresses from people such as Tony Buzan on mind-mapping or Professor Paul Black in formative assessment. The opportunity to share effective practice and problems encountered with others at the meetings was invaluable. It gave us a sense that the teacher-researchers were not alone in any difficulties they were having. It was also rewarding to share successes and new ideas.

The teachers planned to extend the project the following year. In light of the qualitative data collected from the children, paired learning was to be extended into more classes in the school. This planned extension was supported by high levels of enthusiasm from other members of staff who reported that they had observed the changes in attitude in

Lilac Class children and were therefore interested in trying it out in their classes. The project was incorporated into the school inclusion plan and trialled with other year groups. Other staff who had expressed interest in the project would have an opportunity to become involved.

In summary, it has been found that children's positive attitudes to working with each other are invaluable and there is every indication that it has influenced their behaviour in the playground as well. It has also been pleasing to see how the project has helped them to become more focused on their learning.

The fact that pupils are required to talk before working seems to have contributed to their ability to start and complete work. Their task comprehension is excellent and it is these things which have inspired the staff to continue to promote paired learning in our school.

Fallibroome High School

Co-operative structures have proven to be a very good way of raising confidence among students but, as the implementation is developed, emphasis will be needed on how important it is to maintain a balance between individual work and team time. It must be clear to the students that while answers in class may be team answers, their own individual work is also valued and respected. It is always individual progress that is recorded and monitored by the teacher even if, when planning, drafting or practising in class, there has been team input.

An area for development, concerning differentiation, echoes one of the obstacles identified by the participating teachers. Longer term monitoring needs to be continued to ensure that the needs of all students are being met. As the graph in Figure 10 shows, when asked to rate the benefits to students of using co-operative learning approaches, the teachers strongly highlighted that more help is available if the student is stuck. In this initial phase of developing expertise with co-operative strategies our teachers seem more confident that they help the less able but do not yet feel that they are using them to their full potential to help the most able. Research suggests that the co-operative strategies combine well with thinking skills approaches and so this will be an area to concentrate on in the future.

Over the past few years the school has explored various strategies that help learning become more efficient and effective. For example, work has been completed on structuring lessons more carefully and more explicitly, ensuring students are aware of their learning preferences and aptitudes, and helping staff to learn how to cater for different approaches in their lesson delivery.

Beyond this, though, the school has focused on creating a conducive climate for learning which encompasses an awareness of how dispositions, emotional intelligence and self esteem impact on learning. This wider understanding of what creates a successful learner and learning environment led us to want to investigate the potential benefits of the co-operative structures.

Common Themes Emerging

These enquiries into Learning to Learn and the different ways pupil talk can be promoted in the classroom are relatively convincing. The teachers have outlined the benefits for pupils' attainment as well as their understanding of the benefits to learning. The research can be criticised as being context specific, but the messages when taken across these two very different situations provide a powerful insight into the processes needed to develop talk effectively. However, it could be argued that these enquiries are not adding anything new to the debate. There is abundant convincing evidence of the benefits of pupil talk as facilitated using approaches such as those recommended by Kagan (2001, 1992) and Hannan (1991). What is new and what does become apparent in these reports, is the importance of the practical enquiry process that the teachers have undertaken; the impact it has had on their own understanding about learning. It should be considered that enquiry could be a process that might support the success of new innovations in schools and that could arguably therefore be seen as a necessary component of Learning to Learn and the researching of this idea by the academic university team. The professional learning gained by these teachers is the interesting aspect and which we argue challenges Hammersley's (2004) assertion that action research cannot truly be both action and research.

In the teachers' enquiries into Learning to Learn it has been evident that not only have the individual teachers and their colleagues in school developed their knowledge about the use of talk in the classroom, but they have also developed a further understanding of themselves as professionals. Through participation in the project, the teachers have become aware of the development spiral which professional enquiry through action research can contribute to (See Figure 1) which challenges them to reflect on and revise their practice. Their research questions may focus on pupil talk but they also form a developing basis for knowledge about teaching and learning. The teachers have documented the feeling of empowerment that the enquiry process in partnership with the Research Centre for Learning and Teaching at Newcastle University has given them and they tell of what a positive learning experience it has been for the school, for the teachers and for the pupils.

Involvement in the projects seems to have supported the teachers' capacity for innovation and risk taking, as observed in the work of Haggarty and Postlethwaite (2003). The

classroom enquiry process embedded in a larger national project enabled teachers to develop ideas outside of their normal boundaries. Within an education system, such as the current English one, dominated by centralised policy and arguably not encouraging independent pedagogical development, this kind of risk-taking should be valued and encouraged. Indeed it is believed by some as essential to successful education:

> . . . about the fundamental necessity of critique, of challenge to the power of authority, of troublesome questioning, of bottom-up epistemologies in top-down regimes, of methodological pluralism, of internal rather than external audit . . . (Dadds, 2003, p. 279)

The support from the wider research project appears to have been successful in encouraging the teachers to innovate and to develop both the individual's and the school's vision of teaching and learning.

Due to the fact that the teachers have had control over the focus of their research they have made explicit connections from their enquiries to the schools' perceived ethos and the needs of staff and pupils. The Learning to Learn theme has been identified as a feature not just for students, but also for the teachers and other adults in the school. For example, Fleecefield, in their report, stated:

> . . . belief in learning being constant for adults and children alike . . . (Fleecefield)

This relationship that the schools and teachers have developed between the implementation of new approaches (in this case related to Learning to Learn) and enquiry, is obviously not a static one. Both schools are seeing the potential for further development with the research and enquiry strand continuing. It is seen as healthy for the school and teaching and learning to think within this evolving and recurrent cycle of systematic enquiry. We believe that locus of control and self-identified research agendas are key characteristics of this project and of successful professional enquiry as a tool for school improvement: the benefit of this trialling and developing within their own school is documented by Fallibroome as key to expanding the research and L2L strategies across the school:

> . . . the fact that the techniques have been thoroughly trialled by teachers in our school, with our children and found to be worth development, provides momentum to our teaching and learning agenda. (Fallibroome)

Endnotes

[1] http://www.campaignforlearning.org.uk/

[2] The full case studies can be downloaded along with all 85 case studies from the Learning to Learn in Schools project from www.CampaignforLearning.org.uk

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