

Report on the Evaluation of the Impact of the Thinking School Approach

A report carried out by Thinking Schools International and the University of Exeter evaluating the impact of the Thinking School Approach

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Background: The 'Thinking School Approach' is defined by Emeritus Professor Bob Burden as *"an educational community in which all members share a common commitment to giving regular careful thought to everything that takes place. This will involve both students and staff learning how to think reflectively, critically and creatively, and to employing these skills and techniques in the co-construction of a meaningful curriculum and associated activities. Successful outcomes will be reflected in student's across a wide range of abilities demonstrating independent and co-operative learning skills, high levels of achievement and both enjoyment and satisfaction in learning...."* (Burden, 2006). Since 2005, fifty five schools in the UK have gained 'Thinking School' accreditation from the University of Exeter by adopting a **whole school approach** to the teaching of thinking, embedding thinking in the heart of the school and its curriculum. A further hundred plus schools in the UK have joined the Thinking Schools network, often facilitated and trained by consultants from Thinking Schools International. In most cases, the journey to accreditation has taken at least three years to achieve. In September 2012, the University of Exeter and Thinking Schools International jointly funded a survey to evaluate the impact of the 'Thinking School' approach, as adopted by these 'Thinking Schools'. This is a preliminary survey, identifying areas for further research and evaluation.

The survey focused on five key areas:

- Satisfaction with the Thinking School approach (whole school) by accredited schools
- Attainment
- Thinking Schools International Strategies adopted by Thinking Schools (i.e. Thinking Maps, Habits of Mind, Philosophy for Children)
- Evaluation Methods of the Thinking School approach
- Major benefit and issues of the Thinking School approach

Summary of Key Findings:

- 100% of primary and 87.5% of secondary accredited schools are satisfied with the whole school Thinking School approach: none are dissatisfied.
- 90% of all accredited schools reported an improvement in the quality of lessons: none have seen lesson quality adversely affected.
- 89% state that the Thinking School approach raises attainment: Only one school stated attainment wasn't raised, but neither did it drop.
- All five major Thinking School International programmes are reported to be highly effective.
- 82% of accredited schools would welcome more support with their evaluation methods.
- Benefits greatly outweigh issues

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Introduction

Initially there will be an outline of the following:

1. The purposes of the evaluation project
2. The leaders invited to participate
3. The focus of the report.

Then the main findings of the report will be summarised before expanding on each of the survey areas, supported by data and leader feedback.

1. Purposes of the evaluation project

The evaluation project was jointly funded by the University of Exeter and Thinking Schools International. The purposes of the project were to:

- Report on the impact of the Thinking School approach as defined by Professor Burden and outlined on the TSI website
- To consider the benefits and weaknesses of the approach and to recommend further exploration of ways forward to make improvements
- To consider the effectiveness of the various thinking and learning strategies
- To gather feedback and make recommendations regarding the evaluation and measurement of the impact of cognitive education
- To specifically look at the use and the impact of MALS (Myself as a Learner Scale) on Thinking Schools

2. The leaders invited to participate

The main focus of the project was an online survey. The schools invited to participate and their response is as follows:

- Schools accredited by the University of Exeter as a Thinking School or an Advanced Thinking School: 49 were sent the survey: 27 replies were received.
- Non-accredited schools who had received at least one full training session from Thinking Schools International: 105 were sent the survey: 35 replies were received.
- Additionally 5 of the thinking leaders at accredited schools were interviewed for further feedback. Quotations are from interviews and comments made on the survey.

3. The focus of the report

This preliminary report focuses on the information gathered from the schools accredited by the University of Exeter. These schools have shown a commitment to the Thinking School approach over time and their practice has been positively evaluated by the assessors from the University of Exeter. A total of 26 surveys were submitted by accredited schools, though 4 did not answer all the questions. The survey was

completed anonymously and the survey brief suggested that thinking leaders should consult colleagues regarding answers. The minimum time to complete the survey would have been 30 minutes but with consultation would have take considerably longer. A copy of the survey is available in Appendix A.

Summary of Key Findings

- 100% of primary and 87.5% of secondary accredited schools are satisfied with the Thinking School approach: none are dissatisfied.
- 90% of all accredited schools reported an improvement in the quality of lessons: none have seen lesson quality adversely affected.
- 89% state that the Thinking School approach raises attainment: 3.5% state that it does not raise attainment.
- 96% used lesson observations as one of the factors when making their judgement on attainment.
- All five major Thinking School International programmes are reported to be highly effective.
- 82% of accredited schools would welcome more support with their evaluation methods.
- Benefits greatly outweigh issues:
 - o Common major benefits include the whole school approach, independence and learner ownership, lesson quality
 - o There are some sustainability issues for some, for example the training of new staff.

The Survey – Key Areas

A. Satisfaction with the Thinking School approach

The first table shows the levels of satisfaction of accredited schools with the Thinking School approach. Each school was asked to give a score from 1 being very high, to 5 being very low.

Table 1: Levels of satisfaction with the Thinking School Approach

	High			Low	
	1	2	3	4	5
Accredited primary	64%	35%	0	0	0
Accredited secondary	75%	12.5%	12.5% (1 school)	0	0
All accredited schools	68%	27%	4.5% (1 school)	0	0

22 accredited schools completed this question: 15 were highly satisfied and 6 reported good levels of satisfaction. This very positive endorsement is reflected in the long term commitment these schools have made to the Thinking School approach. Only one school, a secondary, was neither satisfied nor dissatisfied and no reason was given. All of the accredited schools declared they had adopted a whole school approach to the teaching of thinking.

“You’ve got to jump in with two feet, it’s got to be a whole school approach, otherwise it won’t work,”
Patrick Affley, Headteacher, Christ the King Primary, Cardiff.

In Table 2 schools were asked to elaborate on their decision regarding levels of satisfaction in Table 1, by giving a score from 1 to 5 on given aspects of the school that had been positively affected by the Thinking

School approach. A score of 1 can be considered very good and 2 good. The separate primary and secondary figures show the number of schools at each level. The figures on the right for all accredited schools are in percentages. The results here explain why there is such a high level of satisfaction with the approach.

Certain of the aspects in table 2 relate to the “Six Starting Points” of the TSI programme “Growing Thinking Schools Guide.” For example, consider the following positive results: Pupil Involvement 96.5% and Collaborative Learning 81.5% - Collaborative Learning starting point; Questioning Skills of Teacher 86.5%, Questioning Skills of Learners 86%, Reflection on Learning 90.5% - Reflective Questioning starting point. All of these eleven aspects are very positively endorsed.

Table 2: To What Extent Have the Following Aspects Been Positively Affected by the Thinking School Approach in Accredited Schools?

1 High to 5 Low	Prim High					Sec High					All High %				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Pupil Self-confidence	5	7	1	0	0	3	3	2	0	0	38	47.6	14	0	0
Pupil involvement	8	6	0	0	0	1	6	1	0	0	41	54.5	4.5	0	0
Behaviour and respect	3	4	4	3	0	1	3	1	2	0	19	33	20	24	0
Quality of lessons	4	8	1	0	0	4	3	1	0	0	38	52	9.5	0	0
Teacher morale and motivation	2	10	2	0	0	0	6	1	1	0	9	73	13.6	4.5	0
Teacher initiative	4	8	2	0	0	0	6	1	1	0	18	63.5	13.6	4.5	0
Collaborative learning	9	3	2	0	0	1	5	2	0	0	45.5	36	18	0	0
Creative thinking/ learning	4	5	1	0	0	3	4	1	0	0	39	50	11	0	0
Questioning skills - teacher	8	4	2	0	0	4	3	0	1	0	54.5	32	9	4.5	0
Questioning skills - learner	5	8	1	0	0	1	5	1	1	0	27	59	9	4.5	0
Reflection on Learning	7	7	0	0	0	1	5	2	0	0	36	54.5	9	0	0

Clearly in order to interpret individual school results, more information is needed. However, having the results from over 20 school communities does give credence to general trends across a range of schools. In Table 2 we see very positive results affecting the quality of teaching and learning for both pupils and teachers. The one exception is “Behaviour and Respect”, with 42% positive and 24% negative in this aspect this is an area for further investigation. One school experiencing positive benefits on behaviour is Monnow Primary near Newport in South Wales.

“Behaviour and attitudes to learning have improved considerably,” reported Meryl Echeverry, Headteacher.

What is happening at Monnow and in the 42% of schools that others can learn from? This result for “Behaviour and Respect” also does not equate with the high levels of satisfaction with Habits of Mind, Thinking Schools International major programme supporting dispositions development (see Table 11).

One may also identify from Table 2 the one secondary school that is currently struggling with the approach, hence the negative 4.5% score on several aspects.

Of particular note and significance are the very high scores for the positive effect on the following:

- Quality of Lessons - 90%
- Pupil Involvement - 95.5%
- Reflection on Learning - 90.5%
- Creative Learning & Thinking 89%.

It is also noteworthy to see high scores in other aspects which indicate improvements and a shift in classroom practice such as Questioning (both for Teachers and Pupils), Collaborative Learning and Teacher Initiative.

“Teachers have increased their capacity and have become better equipped to provide lessons which challenge and stimulate children. They are constantly striving to improve their own practice and this has led to greater collaboration and shared practice,” Carol Lawrenson, Headteacher, Spinney Avenue Primary, Widnes.

B. Attainment

The question of attainment and whether the Thinking School approach positively affects standards is extremely important for all stakeholders. The question is not an easy one to answer as many leaders pointed out: the Thinking School approach is just one of a range of strategies schools adopt to improve classroom learning standards. However, of the 26 accredited schools who answered this question, 23 were confident enough to say that the approach does raise standards. The full results are:

- 1) Yes, Thinking School raises attainment : 89%
- 2) No, Thinking School does not raise attainment : 3.5%
- 3) Unable to answer : 7.5%

“It is incredibly difficult to link the development of thinking skills with the results achieved by students, having said that, GCSE results, A2 and IB results have all shown an upward trend over the five years we have been involved with the programme,” Richard Coe, Assistant Headteacher, The Rochester Grammar School.

Paul Fleming, Thinking School leader at Sedgefield Community College in County Durham, reported the following improvements in his school which was accredited in 2012. *“School achieved 64% A*- C in summer 2010. School achieved 66% A*- C in summer 2011. School achieved 81% A*-C in summer 2012. We hope to ensure another increase in results in summer 2013.”*

S.K. Tamber of Wood Green Academy in Wednesbury found a similar impact, *“Summer 2012 public examination results were our best ever. 83% of all Year 11 students achieved 5 or more GCSEs grades A*-C, 71% of Year 11 students achieved 5 or more GCSEs A*-C including English and Maths. (Last year’s results 2011: 59% of all Year 11 students achieved 5 or more GCSEs A*-C including English and Maths.) In our*

recent Ofsted inspection 2012 we sustained our “Outstanding” status, achieving a Grade 1 in Teaching and Learning and all other categories.”

A further anonymous survey submission had seen a sustained improvement over a longer period: “Sept 2005 73% 5 A*-C GCSEs , 67% 5 A*-C including English and Maths. In the top 50% value added. Sept 2012 99% 5 A*-C GCSEs, 89% 5 A*-C including English and Maths. In the top 5% value added.”

Primary school leaders also report a positive impact on SATs results: “Attainment in SATs at the end of KS1 and KS2 has improved,” Sarah Evans, Thinking Leader, Penn Wood Primary, Slough.

“Higher % of children achieving above national expectation in both key stages, ” Rose Cope, Thinking School leader, Kingsdown and Ringwoud Primary, Kent.

Only one school reported that the approach did not raise attainment. It could be queried whether there were other additional factors influencing the issue with standards in this school, but further investigation would be needed to substantiate any such claim.

The schools were asked what evidence they had considered in making their decision regarding attainment in a range of areas. The table below (Table 3) records 87% of all accredited schools used feedback from pupil consultations and an even higher 93% in accredited primaries. This confirms that one key feature of a Thinking School is in place i.e. schools in which pupil views are highly valued. It is also of significance that the schools have almost unanimously (100% in secondary schools and 93% in primary schools) made their decision in light of the quality of lessons. The approach clearly positively impacts teaching and learning.

There are also some interesting questions raised regarding the contrasts between primary and secondary practice. For example, 87% of primaries have considered pupil work when measuring attainment but only 40% of secondary. It would also appear that from our sample of accredited schools that teacher assessment and teacher tests carry more weight in primary schools when making decisions on attainment.

Table 3: Evidence considered to prove affect on attainment

	Public exams / sats	Teacher tests	Teacher assessments	Pupil interview & cons.	Teacher research & feedback	Lesson observation	Pupil work	Other
Primary (14)	78%	57%	87%	93%	57%	93%	87%	Attendance 14%
Secondary (10)	70%	30%	60%	80%	50%	100%	40%	
All accredited schools (24)	75%	46%	75%	87%	54%	96%	66.5%	Attendance 8%

Thinking Leaders were asked to comment on their findings regarding attainment and they are recorded in Table 4. The number recorded next to the comment denotes the number of leaders making this comment, for example, 5 primary leaders commented upon improved pupil independence as an impact of the Thinking School approach and this had supported raised attainment.

Table 4: Leaders comments regarding attainment:

	Comments
Accredited Primary	<p>Hard to be sure (3) Literacy-Writing exceptional (4) Pupils independent (5) Reflective (2) Teachers say yes Teaching improved Some outstanding Thinking & Learning ability Growth mindset Resilience Attitude Collaborative Steady improvement in exams over time Consistent results; Good effects Tools, transferrable skills KS1,2 result steadily improving Lower ability KS1 more engaged Higher % above expectations Positive on all types of assessment 18% rise in T assessments Greater depth</p>
Accredited Secondary	<p>Hard to be sure (3) KS4 T Leaders performed better than peers in exams From 64% A-C 2010 to 81% a-c 2012 Results improve with ability to use tools Write from Beginning Particularly IB Presentation skills improved Confidence Transferrable skills Problem solving Good indicators Special – Speaking & Listening</p>

It is interesting to emphasise that schools have noted attainment improvements in specific areas.

Wellington Primary in Hounslow saw a dramatic improvement in boys' reading, for example, *"We found a 37% increase in the boys' scores in the reading paper: it was phenomenal,"* Kuldip Kahlon, Deputy Head.

Lynne Finn, Headteacher at Beechwood Primary in Runcorn, also noted improvements in Literacy and more specifically in writing, *"By the end of Key Stage 2, although outcomes reveal a spiky profile due to our small numbers, we always exceed our target and many children achieve their challenge target in SATs. Ofsted recently described our achievement in Literacy as exceptional. We perceive one of the biggest impacts to be on writing standards. Data available should you require it."*

Rose Cope, Kingsdown and Ringwold Primary, states that raised standards are, *"Particularly noticeable in written work, with the use of thinking maps to build high quality pieces of writing. Structure and text*

organisation has improved at both key stages. In Numeracy the ability to “Use and Apply” has been improved through the introduction of Building Learning Power and Habits of Mind. Children are dramatically more resilient in their learning and keen to take risks, which has ensured the use of language has improved. In KS1 lower ability academic children have been more engaged in their learning and as such there has been an increase in them achieving 2Cs in Writing and Maths.”

A large number of schools commented upon increased learner independence and changes in classroom culture not only impacting standards but also the way in which results are achieved.

“Our results in statutory examinations were always very good, so I don’t feel that the Thinking for Learning programme has affected these. However, we used to achieve these results much more through a coaching approach, and felt students’ independence was quite limited. Our T4L programme is slowly shifting the balance of responsibility from teacher to student and helping students to become more self-aware, independent learners. We introduced it from a qualitative rather than a quantitative perspective,” Anna Jordan, Thinking Leader, Derby High School.

In Table 5 we see recorded responses to the question whether specific groups of pupils have been more noticeably affected in terms of attainment. The figures do not indicate, for example, that only 46% of accredited primaries thought that higher ability learners were helped by the Thinking School approach, but that 46% of these schools felt that higher ability learners were especially benefiting.

Table 5: Specific Groups especially supported by Thinking School Approach

	Higher Ability	Lower Ability	Male	Female	Specific Age Group	Pupil Premium	Other
Accredited Primary 13 schools	46%	54%	54%	15%		15%	SEN 15%
Accredited Secondary 9 schools	44%	67%	33%	22%	44%		Visual Learners 11%
All Accredited 22 schools	45%	59%	45%	18%	18%	9%	SEN 9% Vis Ls 4.5%

One group commonly reported to be supported in improving their learning through the support of Thinking School strategies are lower ability pupils and pupils with special educational needs. Judith Stephenson, Thinking Leader from Barbara Priestman Academy, an accredited special school in Sunderland made the following comments:

“It is difficult to prove that the Thinking School approach has had effects on our results, but the external moderator for the Speaking and Listening part of English GCSE was extremely impressed with our students and how articulate they were and how they were able to reason and justify. Also in terms of students with Autistic Spectrum Disorder our students tend to be quite rigid in their way of thinking but the strategies we have put in place, especially the visual ones have helped them to see the curriculum as a whole and have helped them transfer skills from one area to another. The maps are very structured and they like that. As well as the tools from Thinking Schools we have also implemented Dramatic Enquiry across the school and the students really enjoy this. This has helped them with flexibility of thought and has helped them argue

and debate in a structured but relevant way and they are beginning to see things from different people's perspectives, again something that the students with ASD find very difficult. Students have been interviewed about the various thinking tools and the impact they think they have had upon their learning."

An interesting project at Oakwood Park Grammar in Maidstone has also impacted on a specific group of pupils. The boy's school, with the support of Professor Burden from the University of Exeter has developed a pilot qualification in Thinking Skills. Boys who took this qualification are now involved in activities around school as 'Student Thinking Leaders'.

Lynn Western, the Thinking Skills Co-ordinator at Oakwood Park explains: *"The thinking skills qualification required the boys to research thinking skills, research the impact of thinking skills on their own learning, research the impact of thinking skills on others' learning and go into primary schools and teach. They had a lot of input into how the course developed which really built their confidence."*

Lynn Western also notes the impact on GCSE performance when these students, who were of mixed ability and from one particular form, sat their examinations last summer... *"When we analysed their GCSE results it looks like that particular cohort who took the thinking skills qualification actually have got much improved results over the rest of the year group."*

Evidence suggests that the depth of understanding of the Thinking School approach, their commitment, new responsibility and opportunity to teach others has had a significant impact on their attainment. Some of this group are now involved in supporting a new group working towards the qualification.

C. Thinking Schools International Strategies

The purpose of a further section of the survey was to gain feedback on the success of the programmes taught to schools by Thinking Schools International. The next tables detail the order that schools introduced the programmes. We can see from the data in table 6 that the most popular starting point for accredited primaries has been Edward de Bono's Six Hats/CoRT skills. However, in secondary school the almost universal starting point has been David Hyerle's Thinking Maps. What this information doesn't include is whether these programmes were introduced by an external trainer, such as Thinking Schools International or whether the school put together their own training. Some schools will consider they have sufficient expertise or try to cut costs by leading their own training. The impact of the quality of training on successful classroom practice is another potential area for further research.

Tables 6, 7, 8: Order of Introduction

Primary Accredited Schools

Table 6	1 st	2 nd	3 rd	4 th	5 th	Not used
Thinking Maps	4	11	1	0	0	1
Habits of Mind	4	1	4	3	3	2
P4C/C of E	1	2	3	3	4	3
6 Hats/CoRT	6	2	4	5	0	0
Questioning	1	1	4	5	3	1

Secondary Accredited Schools

Table 7	1 st	2 nd	3 rd	4 th	5 th	Not used
Thinking Maps	9	0	0	0	0	1
Habits of Mind	1	3	0	2	0	4

P4C/ C of E	0	1	2	2	3	2
6 Hats/CoRT	0	2	4	3	0	1
Questioning	1	2	3	1	1	2

All Accredited Schools

Table 8	1st	2nd	3rd	4th	5th	Not used
Thinking Maps	13	11	1	0	0	2
Habits of Mind	5	4	4	5	3	6
P4C/ C of E	1	3	5	5	7	5
6 Hats/ Cort	6	4	8	8	0	1
Questioning	2	3	7	6	4	3

The order of introduction question was also included to examine the relationship of order to the satisfaction with the programmes and perceived importance of the programmes, which are recorded in tables 9, 10 and 11. Although feedback is very positive on all programmes it appears that Philosophy for Children & Community of Enquiry are relatively lower in terms of satisfaction and importance. However, table 8 reveals this area has tended to be introduced more recently, thus it could be an indication that the reason for a lower score in Tables 9, 10 and 11 is that these strategies are less embedded than others.

Tables 9, 10, 11: Average satisfaction and importance scores. 1 high / 5 low

Table 9: All 15 accredited primary schools	Satisfaction	Importance
Thinking Maps	1.2	1.3
Habits of Mind	1.8	1.5
Philosophy for Children/ C of Enquiry	2.0	1.8
6 Hats / CoRT	1.6	1.6
Questioning	1.3	1.3

Table 10: All 10 accredited secondary schools	Satisfaction	Importance
Thinking Maps	1.25	1.8
Habits of Mind	1.6	1.7
Philosophy for Children/C of Enquiry	1.8	2.4
6 Hats/ CoRT	1.4	1.7
Questioning	1.2	1.25

Table 11: All 25 accredited schools	Satisfaction	Importance
Thinking Maps	1.2	1.2
Habits of Mind	1.7	1.5
Philosophy for Children/ C of Enquiry	1.9	2.0
6 Hats/ CoRT	1.5	1.65
Questioning	1.25	1.2

The above tables reveal an overwhelming endorsement of all of these Thinking Schools International strategies by accredited schools who have been using many of them over a sustained period. A further investigation and study, not covered by the survey, could be made into how these strategies integrate effectively in the classroom.

D Evaluation Methods

School leaders were also asked for feedback on their use of evaluation strategies of the Thinking School approach and specifically on the use of Professor Burden’s “Myself As A Learner Scale” or MALS.

Of the 22 accredited schools 8 said they had used MALS and 3 non-accredited schools also reported that they used it. Of this total of 11 schools 8 were primary and 3 secondary schools. The 3 non-accredited schools have used MALS at the start of their journey and will look to use the scale again at a later point to identify change. At this point, then, they have no feedback to offer. The following findings were made by the 8 accredited schools: 1 school found a significant improvement in learner self-perception; 2 schools found a general improvement in learner self-perception; 3 schools found an increased self-awareness in learners.

But this indicates perhaps an issue with how to use the scale. Professor Burden points out that the scale is not intended as a simplistic measure of progress in terms of increased scores in self-perception as a learner through the completion of questionnaires by individuals sitting alone unaided. As one school discovered, the completion of the scale and its impact is improved greatly by discussion with an adult. Another school found MALS helpful in identifying issues of a lack of self-confidence with a significantly low scoring child and through a carefully considered support programme in partnership with the parents were able to address the causes of the issues. MALS used in discussion with an adult would be most suited to a school with an embedded coaching practice. Another school found a similar impact to the Maidstone project outlined previously i.e. that the highest scorers on MALS had a lead role in the school: responsibility boosts self-confidence.

There is clearly a need for better understanding in how to use the scale. One secondary school abandoned the use of MALS, for example, as the starting results were too positive. One leader felt that the notes provided with MALS were too “academic” for teachers to access. Perhaps this identifies a need for the inclusion of the use of MALS and other methods of evaluation in initial Thinking School training. MALS would be more effectively used if the staff implementing the tool were properly trained. However, this would have time and cost implications. To aid progress Richard Coe at The Rochester Grammar has agreed to carry out extensive and systematic use of MALS.

Table 12: Levels of Satisfaction with Own Evaluation Methods

	High				Low
	1	2	3	4	5
All accredited primary	14%	29%	43%	14%	0
All accredited secondary	25%	12.5%	50%	12.5%	0
All accredited schools	18%	23%	45.4%	13.6%	0

The point regarding training and support in evaluation methods is confirmed by the findings in table 12 which reports on school satisfaction with their own evaluation methods. The results here are much less positive than any other part of the survey. A similar picture was found in non-accredited schools. 82% of the accredited schools, experienced in the Thinking School approach stated that they would welcome

support with evaluation strategies. Schools need to have a range of clear evaluation strategies in place when they embark on their learning journey.

E Major Benefits and Issues

The final section of this report will highlight the benefits and issues of the Thinking School approach highlighted by Thinking Leaders in the survey. Schools have not included *all* of their benefits or issues, but only those they perceive as “major”. Table 12, below, reveals that the benefits schools have experienced far outweigh the issues. The number next to the benefit or issue indicates the number of schools making this comment.

Table 12: Major Benefits & Issues of Thinking School Approach

	Major Benefits	Major Issues
All accredited Schools 14 primary 8 secondary	<ul style="list-style-type: none"> - Whole school approach - Common language - Cohesion 10 - Independence 7 - Classroom improvements 5 - Curriculum delivery 5 - Parent support 4 - Ownership 5 - Links to other schools/ university 4 - Teacher motivation/ training / innovation 4 - Collaboration 4 - Creativity 4 - Confidence 4 - Enabling skills 3 - Enjoyment 2 - Attendance 2 	<ul style="list-style-type: none"> - Training new staff/students 6 - Engaging all teachers 5 - Time 4 - Cost 3

A common problem for Thinking Schools is sustainability, hence the issue of the training of new staff. Larger schools are more likely to have accredited in-house trainers and the capacity to work alongside new colleagues. Unless new staff and students receive quality training, the whole school practice will be affected. One possible solution may be the development of a mutually supportive network of Thinking Schools who are willing and able to meet the training needs of the group, such as the existing group led by the Rochester Grammar. Alternatively it may be productive for Thinking Schools International to explore the demand for regional training courses for new staff. Maintaining the momentum of practice and the engagement of all staff is also part of the sustainability problem. Again schools in networks can support each other, sharing good practice. Some schools have had success in this area by offering fresh learning challenges to their staff and by providing opportunities for further study, qualifications and career development.

An emphasis early in this report was on the impacts of the Thinking School approach on attainment, particularly reflected in public examinations. This is because exam results are a key factor in how school performance is judged, particularly in England. This will be a major influence on decisions schools make

regarding which teaching and learning strategies to employ, including thinking strategies. However, although public exams are limited in their demands on students to use higher order thinking strategies, the evidence from the vast majority of accredited schools in the survey, 89%, points to the Thinking School approach supporting exam results.

In addition to attainment, Table 12 again demonstrates the wide ranging benefits of the Thinking School approach. It shows, for example, the massive endorsement of the whole school approach which introduces a common language for learners and cohesion to the work of the school. Sarah Evans, Penn Wood Primary, Slough notes the difference made to confidence and independence: *“Results are more evident in pupils becoming: more confident; being able to think outside the box; asking more questions; making connections in their learning; being able to reflect on their own learning more confidently; starting to know what their next steps should be; becoming more independent learners.”*

Carolyn Evans, Headteacher at Rhydyppenau Primary in Cardiff, records the impact on attendance and collaboration, *“Specific benefits include a 50% reduction in absenteeism, also, children are definitely more confident in their learning, more autonomous and more creative in their approach to their work. As a result the school is in a stronger position to implement the Foundation phase, the Skills Framework and a more active curriculum within Key Stage 2. We have also noted improved transition as a result of collaborative work with the high school which implements the same thinking tools.”*

Monnow Primary has also noted the effect on attendance and additionally on attitude. Meryl Echeverry writes, *“Attitudes to learning have changed, which has had a direct impact on pupils’ attendance and behaviour.”*

Carol Lawrenson, Headteacher at Spinney Avenue, Widnes also identifies independence as a benefit. Furthermore, she points to the benefits for governors and support of parents, *“Pupils are becoming very independent and interdependent. Their confidence has grown and they are very keen to make contributions to school life. They find learning fun and stimulating and like the way in which the curriculum offers opportunities for them to explore and demonstrate their learning in a variety of ways. Governors can see the benefits of the way in which we approach teaching and learning when they look at data and end of year results. Parents have commented that their children love coming to school and are excited about their learning.”*

Rose Cope of Kingsdown and Ringwould Primary has also seen a positive response from parents, *“The parents have been pleased with the impact this has had on independence and a loss of the de-motivation that many of them saw! The children are keen learners who see everything as an obstacle worth engaging with or tackling.”*

The last point made by Rose Cope is one that many leaders have made when interviewed, that a significant strength of the Thinking School approach is that learners’ thinking, both staff and students, is purposeful and likely to lead to active improvements in the school.