# Screening and Interventions for Inattentive, Hyperactive and Impulsive Children

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## End Of Award Report

## Background

There has been considerable research into behavioural and medical interventions aimed to help young children who are severely inattentive, hyperactive and impulsive but despite the volume of published work in this area there is a lack of longitudinal studies and well-designed interventions of direct relevance to the classroom. Such studies are necessary in order to inform policy and practice.

Severe inattentive, hyperactive and impulsive behaviour is characterised by the criteria in version four of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association,1994) for the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). Using these diagnostic criteria, the proportion of children observed by their class teachers to be severely inattentive, hyperactive and/or impulsive in the classroom has been estimated to be between 8.1% and 17%. This is a significant proportion of the school population.

Pupils with ADHD are more likely to achieve lower grades at school than their peers. This trend has been found to extend to children with ADHD symptoms but not necessarily a formal diagnosis of the disorder. Merrell and Tymms (2001) tracked the mathematics and reading progress of a cohort of children over their first three years at school. Additionally all children were assessed at the end of their first year at school by their class teacher using a behaviour rating scale, which was based upon the American Psychiatric Association's criteria. Large differences in reading and maths achievement increasing over time (Effect Sizes[1] of up to 1.14) were found between children who did not meet any criteria on the behaviour rating scale and children who met a high number of criteria. These findings raise two issues:

1. Should screening procedures be put in place for the early identification of children with severe ADHD symptoms? What impact would such a strategy have on the outcomes of these children?
2. Is it beneficial to provide teachers, schools and other professionals working with young children with severe ADHD symptoms research-based advice on how to teach them and manage their behaviour?

Many studies published to date tend to focus on the effectiveness of treatments (including medication) for children who have been diagnosed with ADHD. They do not indicate whether or not those treatments are effective for other children who exhibit severe ADHD symptoms in the classroom setting. Nor do they indicate whether general advice across a range of schools is beneficial or not. Medication is not an option for those children and the establishment of alternative effective strategies would be valuable.

[1] The Effect Size in multi-level models may be calculated in a number of ways. Here it was defined as the coefficient of the dummy representing the intervention divided by the SD of the outcome measure before controls were introduced.

## Objectives

This study aimed to:

- Establish evidence for or against a school-based screening programme to identify children aged 4 - 5 years with either severe inattentive, hyperactive or impulsive behaviour or a combination of these.
- Quantify and compare the effects of different interventions on the academic attainment, behaviour and attitudes of children with and without the behavioural problems of the type described above, over a period of two years.
- Estimate the impact of intervention programmes on teachers' perceptions and actions.
- Provide a cost benefit analysis of the screening process and interventions.
- Report recommendations for screening programmes, interventions and future research.

*These aims were fulfilled.*

**Unavoidable Deviations From The Original Research Proposal**
The experimental design was embedded within an established large-scale monitoring programme used by many schools in England. The project is known as the Performance Indicators in Primary Schools (PIPS) project, run by the CEM Centre, University of Durham (www.pipsproject.org). Schools (and in some cases Local Education Authorities (LEAs)) choose and pay to use PIPS assessments to monitor the attainment, progress and attitudes of their pupils at regular intervals throughout the primary years. As part of the PIPS project, these assessments are marked and analysed by the CEM Centre and feedback returned to schools. This generates a large pupil-level dataset that can be used in further research. It provides an established system within which experiments can be conducted with low data collection costs. However, this method of data collection relies upon schools continuing to participate in the PIPS project for the duration of the study. In the original proposal for this study, it was predicted that a single cohort of 3,000 schools would complete the required assessments of children at the end of reception in the year 2001. The actual number was 2,040 schools. This still gave sufficient data to be able to conduct the experiment and the subsequent analyses in the way that was specified in the proposal but gave an unavoidable reduction in the sample size. It should also be noted that there was an anticipated reduction in the number of schools involved in the project as the pupils got to Year 2.

## Methods

As mentioned in the previous section, the data for this study came from schools participating in the PIPS project. As part of that project, the reading and mathematics attainment of children are assessed at the start of formal school (the start of 'Reception', aged 4 to 5 years), the end of the Reception year and the end of Key Stage 1 (Year 2, aged 6 to 7 years) using assessments that were specially developed for PIPS. Additionally, at the end of Reception, teachers are given the option of assessing their pupils with a behaviour rating scale that was tightly linked to the American Psychiatric Association's diagnostic criteria for ADHD. At the end of Key Stage 1 pupils' attitudes to reading, mathematics and school are assessed. Data from the statutory end of Key Stage 1 assessments were also requested from participating schools.

The study focussed on a single cohort of children for whom data were collected during their first three years at school. The children started school in the 2000/2001 academic year.

When the pupils were in Year 1 (the year after the Reception year), interventions aimed at improving the academic outcomes, attitudes and behaviour of severely inattentive, hyperactive and impulsive children were implemented. There were two levels of intervention: school and LEA. The interventions were randomly assigned at both levels.

For this study, additional information was collected from teachers, Head teachers and LEA personnel when the cohort had reached the end of Key Stage 1.

Table 1 gives details of assessments, the variables and the sample size. For further information about PIPS assessments, see www.pipsproject.org. For further information about the statutory End of Key Stage 1 assessments, see www.qca.org.uk. Copies of the behaviour rating scale administered at the end of Reception and the questionnaires sent to teachers, Head teachers and LEA personnel when the pupils reached the end of Key Stage 1 can be found in the Annex.

*Table 1 Details of Assessments, Variables and Sample*

| Assessment | Timing | Variables | Sample |
|---|---|---|---|
| PIPS On-Entry Baseline Assessment.<br>Administered by teachers. | Start of school (reception year),<br>September 2000 onwards. | Reading,<br>Mathematics. | 2,005 schools,<br>65,440 pupils. |
| PIPS On-Entry Baseline Assessment Follow-up.<br>Administered by teachers.<br>Behaviour rating scale completed by teachers. | End of the reception year, June 2001. | Reading,<br>Mathematics,<br>Behaviour (based on the diagnostic criteria for ADHD in the DSM IV). | 2,040 schools,<br>68,711 pupils. |
| PIPS Assessment 2.<br>Administered by school staff. | Spring term of Year 2, January 2003. | Reading,<br>Mathematics,<br>Attitudes. | 643 schools,<br>17,417 pupils. |
| End of Key Stage 1 Statutory Assessment.<br>Administered by school staff. | Summer term of Year 2,<br>June 2003. | Reading,<br>Mathematics. | 621 schools,<br>18,304 pupils. |
| Re-assessment of behaviour.<br>Completed by Year 2 class teachers. | Spring term of Year 2,<br>February 2003. | Inattentive, Hyperactive and Impulsive Behaviour. | 864 schools,<br>25,482 pupils. |
| Medication summary.<br>Completed by Year 2 class teachers. | Spring term of Year 2,<br>February 2003. | Indication of medication prescribed to individual children to treat ADHD. | 864 schools,<br>25,482 pupils. |
| Pupil level questionnaire.<br>Completed by Year 2 class teachers. | Spring term of Year 2,<br>February 2003. | Details of behaviour modification intervention programme/s (informal or formal) implemented. | 864 schools,<br>25,482 pupils. |
| School level questionnaire.<br>Completed by Head teachers. | Spring term of Year 2,<br>February 2003. | Details of behaviour modification intervention programme/s with respect to whole class and/or school. | 943 schools,<br>943 Head teachers. |
| LEA level questionnaire<br>4 questionnaires sent to each participating LEA. | Spring term of Year 2<br>February 2003. | Questionnaire about policies and actions taken related to assisting children with severe inattention, hyperactivity and impulsivity. | 13 LEAs,<br>16 staff. |
| Teacher Quality of Life questionnaire<br>Completed by Year 2 class teachers of the pupils. | Spring term of Year 2<br>February 2003. | Quality of Life questionnaire for teachers. | 884 schools,<br>1,343 teachers. |

## Experimental Design and Structure of Interventions

The interventions (summarised in Tables 2 and 3) were randomly assigned to 2,040 schools and 24 LEAs.

*Table 2 School Level Interventions*

| | **Identified** Pupils with high behaviour scores in June 2001 identified to the school in September 2001 | **No Identification** Pupils with high behaviour scores in June 2001 remain unidentified |
|---|---|---|
| **Information Book given** School sent book with advice about how to teach severely inattentive, hyperactive and impulsive children in January 2002 | School Intervention Group 1 | School Intervention Group 3 |
| **No Information Book given** School NOT sent an book | School Intervention Group 2 | School Intervention Group 4 |

N.B. Children defined as having high behaviour scores at the end of reception either met 6 or more criteria relating to inattention (Predominantly Inattentive behaviour) or met 6 or more criteria relating to hyperactivity/impulsivity (Predominantly Hyperactive/Impulsive behaviour) or met 6 or more criteria relating to inattention plus 6 or more criteria relating to hyperactivity/impulsivity (Combined behaviour).

The information book was written specifically for this study after reviewing the literature about strategies for teaching and managing the behaviour of children with ADHD (see 'Output 1').

*Table 3 LEA Level Interventions*

| | |
|---|---|
| LEA Intervention Group 1 | Conference and Information Books |
| LEA Intervention Group 2 | Information Book |
| LEA Intervention Group 3 | No conference and no Information Book |

The conference was held in March 2002 when the cohort of pupils was in Year 1. The LEAs in Group 1 were invited to send four personnel from a variety of disciplines (e.g. general education advisers, special educational needs advisers, educational psychologists, social service personnel and health workers) to attend, free of charge. The conference was intended to inform delegates of the latest research on ADHD and included sessions by leading specialists on the educational achievement and progress of children with severe ADHD symptoms, the nature and causes of ADHD behaviour, teaching and classroom management strategies, the management of services and resources within local authorities. See Annex for a list of sessions and speakers.

Four copies of the information book for LEAs, a more academic version of the school book, were sent to each LEA in Groups 1 and 2 in March 2001. Additionally, one copy of the publications 'Attention Deficit Hyperactivity Disorder (ADHD): A Psychological Response to an Evolving Concept', and 'Attention Deficit/Hyperactivity Disorder (ADHD): Guidelines and principles for successful multi-agency working', both published by the British Psychological Society, were given to the LEAs in Intervention Groups 1 and 2.

## Results

This section reports the impact of the interventions on:

- Response rates of the Pupil Level, School Level and Teacher Quality of Life Questionnaires.
- Use of the books sent to schools in Intervention Groups 1 and 3.
- Reading and mathematics progress made by pupils between the end of Reception and Year 2. The whole sample is analysed first and then the focus shifts to children with high scores on the behaviour rating scale.
- Attitudes of pupils in Year 2. The whole sample is analysed and then children with high scores on the behaviour rating scale are investigated further.
- Teachers' quality of life.
- Actions reported by teachers, head teachers and LEA personnel to help pupils with severe ADHD symptoms.

The cost-benefit of the interventions is discussed and recommendations for future screening programmes and interventions suggested on the basis of the results.

**Response Rate of Head Teachers and Year 2 Class Teachers**
The response rates of the School Intervention Groups for the Pupil and School Level Intervention questionnaires and the Teacher Quality of Life Questionnaire were compared.

There was no significant difference between the Intervention Groups. Further investigation using Loglinear analyses indicated no interaction between book allocation, pupil identification and questionnaire responses.

**Use of the Information Book by Year 2 Class Teachers and the Pupils' Behaviour Rating Scale Scores**
One of the questions on the Teacher Quality of Life questionnaire asked teachers how often they had used the information book. About 18% of those who returned questionnaires and had been sent information books responded that they had used them (176 schools out of 983). It was thought possible that those who reported using the books might have a greater proportion of pupils in the class with high behaviour scores but that was not supported when One-way ANOVA was used to compare the average behaviour rating scale score of pupils in schools and the reported book use.

**Mathematics and Reading Progress, Attitudes and Behaviour**
The relative progress and attitudes of pupils were analysed using multilevel models. The major controls were the End Reception Total Score, which was based on reading and mathematics, sex, and behaviour at the end of Reception. The interventions were included in the models together with interaction terms.

The analysis of the progress of the whole sample of pupils using multi-variate multi-level models indicated that there were no statistically significant main effects from the interventions implemented at school level on the achievement or attitudes of the pupils as measured in the PIPS data. There was one significant positive outcome in relation to the interventions and that was for the PIPS Year 2 reading outcome for Intervention Group 1 (information book and identification of pupils with high scores). The coefficient indicated an advantage of 0.15 standard deviation units. These results were reported in detail in an earlier paper (Tymms and Merrell, 2003).

Table 4 shows the results of the multilevel analyses for the statutory end of Key Stage 1 assessments and Year 2 behaviour outcomes of the whole sample. These have not been published prior to this report.

*Table 4 Key Stage 1 and Y2 behaviour Outcomes*

| | End KS1 Mathematics | End KS1 Reading | Year 2 Behaviour |
|---|---|---|---|
| **Fixed** | | | |
| Cons | **0.15(0.030)** | -0.05(0.028) | **0.241(0.035)** |
| End of Reception Total Score | **0.70(0.006)** | **0.72(0.006)** | |
| Sex (girls=1, boys=0) | **-0.23(0.011)** | **0.10(0.011)** | **-0.232(0.015)** |
| End of Reception Behaviour | **-0.030(0.002)** | **-0.020(0.002)** | **0.136(0.002)** |
| **Book** | 0.030(0.041) | 0.020(0.038) | 0.028(0.049) |
| **Identification** | -0.010(0.041) | -0.010(0.038) | 0.005(0.046) |
| **Book X Identification** | -0.02(0.058) | -0.003(0.054) | -0.089(0.068) |
| **Random** | | | |
| School | **0.11(0.007)** | **0.09(0.006)** | **0.164(0.011)** |
| Pupil | **0.41(0.005)** | **0.41(0.005)** | **1.005(0.010)** |
| % Variance associated with school | 20 | 18 | 14 |

1. The coefficients in bold are significant at the 5% level.
2. The rows in red are for the interventions.
3. All the outcome measures and the main cognitive control are normalised and have a mean of 0 and a SD of 1.

The results show the cognitive control accounting for about half of the pupil level variance for the cognitive outcomes. (This can be judged from the coefficients, which give an indication of the variance associated with the pupil level when squared.) The higher the score on the behaviour rating scale at the end of reception, the slower the progress. The girls made a little better progress in reading than boys, a little worse progress in mathematics and had fewer behavioural problems, after taking the other variables into account. After controls, the variance associated with school membership was around 20% for the cognitive variables. The proportions of variance associated with school for behaviour was lower. There were no significant results associated with the interventions.

Next, the focus shifted specifically to children with high scores on the end of Reception behaviour rating scale. Similar multilevel models (see Tables 5 and 6) were employed and the focus was achieved by including behaviour as a dummy variable.

*Table 5 PIPS outcomes for children with high behaviour scores*

| | Year 2 PIPS Mathematics | Year 2 PIPS Reading | Attitude to Mathematics | Attitude to Reading | Attitude to School |
|---|---|---|---|---|---|
| **Fixed** | | | | | |
| Cons | **0.114 (0.019)** | 0.010 (0.019) | **-0.030 (0.015)** | **-0.207 (0.013)** | **-0.164 (0.015)** |
| End of Reception Total Score | **0.691 (0.007)** | **0.745 (0.007)** | **0.049 (0.009)** | **0.103 (0.008)** | 0.001 (0.008) |
| Sex | **-0.129 (0.013)** | **0.086 (0.012)** | **0.064 (0.015)** | **0.333 (0.014)** | **0.317 (0.015)** |
| Behaviour Dummy | **-0.198(0.042)** | **-0.172 (0.038)** | -0.090 (0.049) | **-0.085 (0.045)** | **-0.154 (0.047)** |
| **Book X Behaviour Dummy** | -0.038(0.059) | 0.070 (0.054) | 0.131 (0.070) | **0.173 (0.063)** | **0.176 (0.067)** |
| **Identification X Behaviour Dummy** | -0.076 (0.057) | 0.087(0.053) | -0.071 (0.069) | -0.015 (0.062) | -0.011 (0.067) |
| **Book X Identification X Behaviour Dummy** | 0.011 (0.082) | **-0.182 (0.075)** | -0.060 (0.098) | -0.050 (0.089) | -0.152 (0.095) |
| **Random** | | | | | |
| School | 0.105 (0.009) | 0.117 (0.009) | 0.064 (0.006) | 0.028 (0.003) | 0.061 (0.006) |
| Pupil | 0.397 (0.006) | 0.329 (0.005) | 0.825 (0.010) | 0.703 (0.008) | 0.768 (0.009) |
| % Variance associated with school | | | | | |

*Table 6 End of Key Stage 1 and behaviour outcomes for children with high behaviour scores*

| | End KS1 Mathematics | End KS1 Reading | Year 2 Behaviour |
|---|---|---|---|
| **Fixed** | | | |
| Cons | **0.101 (0.016)** | **-0.100 (0.015)** | **0.436 (0.028)** |
| End of Reception Total Score | **0.711 (0.006)** | **0.735 (0.006)** | |
| Sex | **-0.216 (0.011)** | **0.114 (0.011)** | **-0.295(0.023)** |
| Behaviour Dummy | **-0.243 (0.035)** | **-0.158 (0.036)** | 1.354 (0.080) |
| **Book X Behaviour Dummy** | 0.043 (0.050) | 0.002 (0.052) | **-0.262 (0.110)** |
| **Identification X Behaviour Dummy** | 0.044 (0.049) | 0.083 (0.051) | 0.053 (0.111) |
| **Book X Identification X Behaviour Dummy** | **-0.160 (0.071)** | **-0.200 (0.074)** | -0.236 (0.153) |
| **Random** | | | |
| School | 0.104 (0.007) | 0.087 (0.006) | 0.142 (0.016) |
| Pupil | 0.418 (0.005) | 0.412 (0.005) | 0.998 (0.016) |
| % Variance associated with school | 19 | 21 | 12 |

The tables indicated three statistically significant main effects all of which were associated with the information book. Two were related to attitudes (to reading and school) and for those the Effect Sizes were 0.17 standard deviation units. It is worth noting that the assignment of the book linked to the third attitude measure (mathematics) almost reached statistical significance at the 5% level The third significant result showed that the Year 2 behaviour scores dropped by almost 0.3 of a standard deviation.

There were three significant interactions, which were negative. The first related to the PIPS Year 2 Reading outcome (0.18 standard deviations), the second to the end of Key Stage 1 reading (0.16 standard deviations) and the third to the end of Key Stage 1 mathematics (0.20 standard deviations). The Information Book gave the teachers general ways of working with children's behavioural difficulties that were found to be beneficial. Before children are formally identified, teachers might still regard their behavioural problems as a sign of immaturity or a clash of personalities between pupil and teacher, but when the children are labeled, the teachers might shift their viewpoint and try only to contain the situation - they might not really push the children to attain but simply keep them happy - in colloquial terms they 'write them off'. So why does identification alone not have a significant negative impact? Perhaps when teachers use the book it focuses their attention and keeps the labeled children in mind. Only by identifying pupils with high behaviour scores AND using the Information Book do the negative outcomes follow. This interaction requires further investigation in the future.

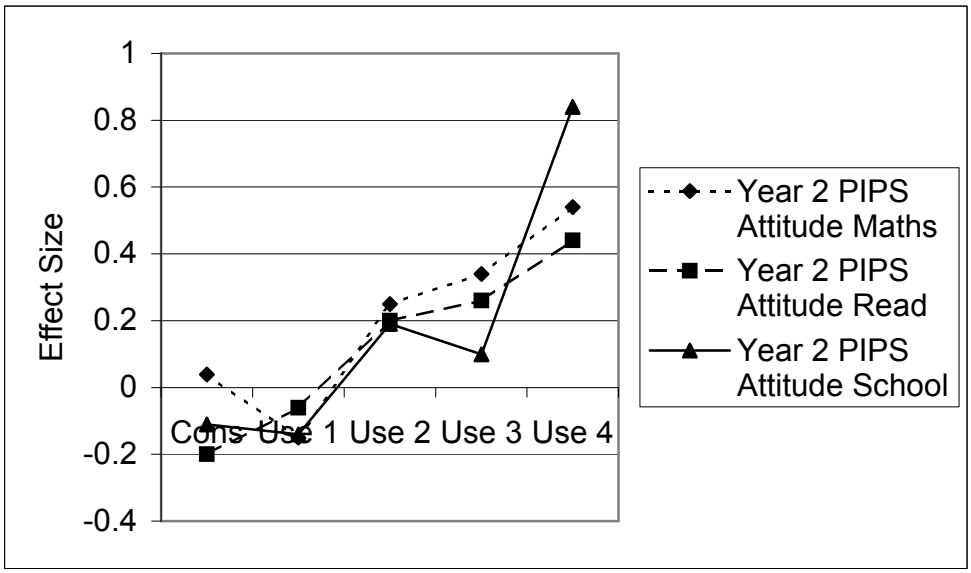
A third level (LEA) was added into the models in order to explore the impact of the LEA Interventions on the outcome variables. The models indicated that none of the LEA level interventions resulted in a significant impact on any of the outcome measures.

**Was There Evidence That Greater Use Of The Information Books Was Associated With Positive Outcomes?**

The data on information book use were put into four categories varying from no use (Use 1) to very regular use (Use 4). Multi level models were used for the analysis. None of the coefficients were significant, possibly because there were very few teachers in some of the categories. However the trends illustrated in Figure 1 illustrate that more positive attitudes were associated with the more frequent use of the information book.

No parallel improvement in behaviour was seen.

*Figure 1 PIPS Year 2 Attitudes*



The results described above were calculated from the whole sample. When the sample was restricted to children with high behaviour scores at the end of Reception there were no parallel findings.

The analysis was based on the questionnaire sent to Year 2 teachers. It should be remembered that the Year 1 teachers of the cohort in question could have used the Information Book. Use of the Information Book over the two years would have an impact on the academic, attitude and behaviour outcomes in Year 2 and yet may not be apparent from the analysis of the Year 2 teachers' reported use of the Information Book.

**Interventions and Teachers' Quality Of Life**
The four questions relating to the quality of teaching life (stress, enjoyment, on top of things, and class behaviour) were combined to form a single scale (Chronbach's alpha= 0.67). The results were analysed in relation to the interventions using two-way ANOVA. After controlling for behaviour at the end of reception and school size, a significant ($p<0.05$) positive main effect relating to the books was found (Effect Size = 0.14). A relationship between year group size and teachers' quality of life would be expected, particularly if some of the children in a larger year group have behavioural problems. The results found here confirm that hypothesis.

The other main effect and the interaction were not significant.

## Actions Taken By Teachers, Head Teachers and LEA Personnel

*LEA Personnel*
The number of responses (15 respondents from 13 of the participating LEAs) were not sufficient to show even modest effects however there were some points of interest. The majority of responders answered 'yes' to questions 1 – 5. Eight people said that neither their LEA nor the schools in their LEA used the Information Books from this study. Interestingly three of those individuals were from LEAs in Intervention Group 1. Four of the five individuals that said their LEAs/schools did use the Information Book were also from Intervention group 1.

Additionally:
- After the conference for LEA Intervention Group 1, one of the LEAs requested copies of the information book for each of their advisers.
- Three of the LEAs in LEA Intervention Group 1 and one LEA from Intervention Group 2 requested lists of schools assigned to each School Intervention Group for their district.

*Head Teachers*
No significant differences were found between intervention groups for questions 1, 2 and 3 of the School Level Questionnaire.

Significantly more head teachers (84% compared with 77%) from schools that received the Information Book and/or the identification of children with high behaviour scores reported that their school worked in partnership with other services (e.g. health, social) to provide help for children with severe ADHD symptoms.

*Teachers*
On the Pupil Level Questionnaire, the Year 2 teachers were asked to describe specific actions taken to help teach or manage the behaviour of children with severe ADHD symptoms. These were coded into three broad groups:

- Helping the child with set tasks in the classroom/school.
- Encouraging better behaviour in the classroom/school.
- Other actions (child repeats a year of school, liaison with parents, involvement with outside agency).

No significant differences between intervention groups were found.

Teachers were also asked to report which pupils had been prescribed medication for ADHD symptoms. Only 77 pupils were identified (0.3% of the sample), and there was no significant difference between intervention groups.

**Economic Significance**
A further consideration when evaluating the impact of an intervention is the size of the effect it makes given the cost of its implementation. Leech and Onwuegbuzie (2003) defined that as 'Economic Significance'. They reasoned that a low cost intervention which results in a small positive effect might actually be more cost effective than an expensive intervention that makes a larger difference and that it is important to consider the two factors together.

Clearly there is no benefit if there is no detectable gain and this section focuses on the use of the Information Book, which had a positive impact on children's attitudes and behaviour as well on teachers' quality of life.

The Information Book cost £2.55 and the formula given by Leech and Onwuegbuzie for the Cost per level of Effectiveness Economic Significance Indicator (CE ESI) is the Cost divided by the Effect Size. If we consider an LEA with, say, 80 schools the cost for two books per school would be £408. This indicates that the CE ESI for an improvement in pupils' attitudes to reading and school would be about £2400 per LEA. The CE ESI for an improvement in Y2 behaviour of children with ADHD symptoms would be £1569. These figures may be compared with other interventions such as the national literacy strategy or in-service training for example which has costs starting in the 5 figure range and going up to millions of pounds. Unfortunately the authors know of no comparative data but policy makers may be able to compare this with training programmes that they implement and make appropriate judgements.

**Summary of Results**
*Whole sample*

- Pupils from schools that received the Information Book and where pupils with high behaviour scores were identified had significantly higher PIPS Year 2 Reading scores than the pupils in the other intervention groups. The Effect Size was 0.15.
- The teachers in moderate to large sized schools that were sent information books had significantly more positive scores on the Teacher Quality of Life scale. The Effect Size was 0.14 for the whole sample.
- Seven percent more Head teachers from schools that had received the book or lists of named pupils or both reported that they worked in partnership with other services that provide help for children with severe ADHD symptoms compared with Head teachers from the Control Group. This was statistically significant.
- A clear positive association was found between the frequency of use of the information book by Year 2 teachers and an improvement in the reading, mathematics and attitudes of pupils. This did not reach statistical significance.

*Children with high scores on the behaviour rating scale*

- Pupils in schools that received the Information Book had significantly more positive attitudes towards school and reading. Effect Sizes were 0.17. The attitude to mathematics was approaching significance.
- The behaviour of pupils with high scores on the behaviour rating scale in schools that received the Information Book had improved significantly, Effect Size = 0.26.
- Although identifying children with high behaviour scores did not have a significant effect in itself, significant negative interactions between the Information Book and Pupil Identification were found for the End of KS1 reading and mathematics scores. The Effect Sizes were in the range between –0.16 and –0.2.

**Recommendations**

- Schools should be provided with information and advice on how to manage and teach severely inattentive, hyperactive and impulsive children.
- School staff should be encouraged to incorporate the strategies suggested in the information book into their everyday practice.
- Further investigation is needed into effective methods of encouraging teachers to implement the practices recommended in the Information Book.
- No wide scale screening program to identify children with ADHD systems should be implemented at this stage.
- Further investigation is needed to ascertain how the identification of pupils can have a positive impact.

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# Annex

## Behaviour Rating Scale

Score 1 mark for each statement which has generally applied to the child during their time in your class. Consider a criterion met only if the behaviour has persisted for at least six months and is considerably more frequent than that of most other children of the same gender and developmental level.

*Inattention*

1 Makes careless mistakes in school work or other activities.
2 Has difficulty sustaining attention in tasks or play activities.
3 Does not seem to listen when spoken to directly.
4 Does not follow through instructions, fails to finish work.
5 Has difficulty organising tasks and activities.
6 Is reluctant to engage in tasks which require sustained mental activity.
7 Loses equipment necessary for activity e.g. pencils, books.
8 Is distracted by extraneous stimuli.
9 Forgetful in daily activities.

*Hyperactivity*

10 Fidgets with hands or feet or squirms in seat.
11 Leaves seat in classroom or in other situations where remaining seated is expected.
12 Often runs about excessively in situations in which it is inappropriate.
13 Has difficulty in playing quietly.
14 Is often ‘on the go’ as if driven by a motor.
15 Talks excessively.

*Impulsivity*

16 Blurts out answers before questions have been completed.
17 Has difficulty awaiting turn.
18 Interrupts or intrudes on others e.g. pushes into conversations or games.

## Pupil Level Questionnaire, Re-assessment of Behaviour and Medication Summary

Sent to Year 2 teachers for the re-assessment of behaviour, medication summary and pupil level interventions.

*How to fill in the Year 2 Pupil Sheet:*
The sheet is very easy to complete and much of it will be blank when you have finished!

- If a child has left the school cross out their name
- Write the initials of the current Year 2 teacher next to each child.
- If any child is inattentive, hyperactive and/or impulsive, write a score of 1 (mild problems), 2 (moderate problems) or 3 (severe problems) in the boxes as appropriate. Otherwise leave these boxes blank.
- If a child has received medication for the treatment of Attention Deficit Hyperactivity Disorder (ADHD), tick the 'Medication' box.
- Briefly describe any interventions that have been used regularly to help any child with behavioural problems.
- If you have time to supply any additional information in relation to any interventions that you have used and their success with particular children, please comment on a separate sheet.

| **School** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Pupil First Name** | **Pupil Last Name** | **Y2 Teacher Name** | **Inattentive** | **Hyperactive** | **Impulsive** | **Medication** | **Interventions** |
| | | | | | | | |
| | | | | | | | |

## School Level Questionnaire

Sent to Head teachers about school level interventions.

**School Name & Postcode:** _____
**School DfES Number:** _ _ _ / _ _ _ _

| | Yes | No |
|---|---|---|
| 1. Does your school have information and resource packs for teachers with advice to help them work with children who are severely inattentive and/or hyperactive/impulsive? | | |
| 2. Does your LEA offer support and resources to help you work with children who are severely inattentive and/or hyperactive/impulsive? | | |
| 3. Do you have a whole-school policy for identifying and obtaining specialist help for children who are severely inattentive, hyperactive and/or impulsive? | | |
| 4. Does your school work in partnership with other services (e.g. health, social) to provide help for children who are severely inattentive and/or hyperactive/impulsive both in school and out? | | |
| 5. Have you used the book "Working with difficult children in Years 1 and 2: A guide for Teachers"? | | |

We would be grateful for any additional information in relation to the above questions. Please comment overleaf or on a separate sheet if you wish.

## LEA Level Questionnaire

Sent to LEA personnel about LEA level interventions.

**Your name:** _____ **Your position:** _____
**Your Local Education Authority:** _____

| | Yes | No |
|---|---|---|
| 1. Does your LEA directly help schools with the identification of children who have Attention Deficit Hyperactivity Disorder (ADHD)? | | |
| 2. Does your LEA distribute information and resource packs to teachers with advice to help them teach and manage the behaviour of children with ADHD or who are severely inattentive and/or hyperactive/impulsive? | | |
| 3. Does your LEA offer support and resources to help schools teach and manage the behaviour of children who are severely inattentive and/or hyperactive/impulsive? | | |
| 4. Does your LEA work in partnership with other services (e.g. health, social) to provide help for children with ADHD or who are severely inattentive and/or hyperactive/impulsive both in school and out? | | |
| 5. Does your LEA have any special provision outside mainstream classrooms for children with ADHD or who are severely inattentive and/or hyperactive/impulsive? | | |
| 6. Has your LEA or the schools in your LEA used the books "Inattentive, Hyperactive And Impulsive Children: Teaching And Classroom Management Strategies" or "Working with difficult children in Years 1 and 2: A guide for Teachers"? | | |

We would be grateful for any additional information in relation to the above questions. Please comment overleaf or on a separate sheet if you wish.

## Teacher Quality Of Life Questionnaire

Sent to Year 2 teachers.

Your answers will be treated confidentially. However, for this research project we would like to analyse your responses in relation to the behaviour of the pupils in your class and therefore we need to know your name. Please return in the postage-paid envelope when completed.

**School**
**Name of teacher:** _____

For the questions below, put a cross in the box at the position that corresponds to your strength of feeling.

**Example – Your feelings about falling into icy water:**

Great [ X ] Awful

**Your perception of work:**

Relaxing [ ] Stressful

Enjoyable [ ] Unpleasant

On top of things [ ] Overwhelmed

**The behaviour of the pupils in your class:**

No problems [ ] Challenging

**Support for helping you to deal with severely inattentive and or hyperactive/impulsive children:**

Lots [ ] None

**Resources in school for helping you to teach and manage severely inattentive and or hyperactive/impulsive children:**

Lots [ ] None

Useful [ ] Waste of time

**Have you used the book "Working with difficult children in Years 1 and 2: A guide for Teachers"?**

Regularly [ ] Never

## LEA Conference Sessions and Speakers

### Helping Severely Inattentive, Hyperactive and Impulsive Children: Conference for Local Authority Personnel

Introduction to the conference: Context and overview by Professor David Galloway (Emeritus), School of Education, University of Durham.

The educational achievement and progress of children who are severely inattentive, hyperactive and impulsive by Professor Peter Tymms, Director, PIPS Project and Dr Christine Merrell.

The nature and causes of severe inattentive, hyperactive and impulsive behaviour in children, including up to date information about Attention Deficit Hyperactivity Disorder by Professor Eric Taylor, Head of The Child Psychiatry Department, Institute of Psychiatry, King's College, London.

Teaching and classroom management strategies by Ms. Jenny Lyon, Educational Psychologist, Eastbourne Health Trust/East Sussex Educational Psychology Service and visiting fellow at the University of Sussex.

Management of services and resources within local authorities by Nigel Chilton, Senior Special Educational Needs Officer, Durham Local Education Authority.