Chess in Primary Schools

Key Conclusions

1. There is no evidence that the intervention had a positive impact on mathematics attainment for the children in the trial, as measured by Key Stage 2 scores one year after the intervention ended. The same is true for science and reading.

2. There is no evidence that the intervention had a positive impact on Key Stage 2 scores for children eligible for free school meals (FSM).

3. Although a current school teacher is allocated to every chess class, it is desirable for the tutors themselves to have strong class management and teaching skills. Without these, it was difficult to ensure that all children were suitably engaged in the chess lessons.

4. For successful implementation, class teachers need to work closely with the tutor and actively contribute to the intervention. It was felt that classes were less effective if the teacher did not actively take part, or was present only at the beginning and end of the class.

5. Half of the pupils who participated in the trial said that they liked the chess lessons a lot, and only 8% reported that they didn’t like them. School teachers were very positive about the intervention and its impact on pupils’ skills and behaviour.

What is the impact?

Pupils, headteachers and class teachers were generally very positive about the intervention. In particular, pupils liked playing games of chess with their friends, and class teachers welcomed the enthusiasm of the tutors for sharing their expertise. School staff perceived that the chess lessons had a positive impact on maths ability, as well as on a range of important skills for learning such as concentration. What pupils liked least was tutors ‘talking too much’ and some teachers had concerns about the level of tutors’ teaching skills. There were some departures from the intended delivery of the programme—primarily the level of class teacher engagement, which was lower than expected. Moreover, some schools reduced the number of maths lessons in the timetable in order to accommodate the chess lessons. Two key areas for intervention improvement emerged from the study. These were: (a) improving the teaching skills of tutors to help them keep all children engaged—specifically, improving their ability to manage difficult behaviour and manage classes where pupils had varying levels of ability; and (b) increasing the amount of tutor/class teacher liaison.

Despite the generally positive feedback received from schools from the process evaluation, the impact evaluation results found no evidence that the Chess in Primary Schools programme raised children’s attainment in their Key Stage 2 exams. Indeed, the difference between the treatment and control arms was essentially zero. A similar impact was found for pupils eligible for free school meals, and for boys and girls. This is in contrast to the only other large-scale RCT of the impact of chess on educational attainment by Boruch and Romano (2011), who detected a substantial effect for primary school children in Italy and to another recent study by Gumede and Rosholm (2015), which found a positive effect of chess on primary school children’s achievement in Denmark (effect size 0.15). The reasons for the differences could include the fact that this study measured the impact after one year, that this study used high stakes national tests, and the English setting.
### Group Effect size (95% confidence interval) Estimated months' progress Security rating Cost rating

<table>
<thead>
<tr>
<th>Group</th>
<th>Effect size (95% confidence interval)</th>
<th>Estimated months' progress</th>
<th>Security rating</th>
<th>Cost rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupils in CSC schools</td>
<td>0.01 (-0.15, 0.16)</td>
<td>0 months</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
<tr>
<td>Pupils in CSC schools eligible for FSM</td>
<td>0.01 (-0.18, 0.19)</td>
<td>0 months</td>
<td><img src="image" alt="Rating" /></td>
<td><img src="image" alt="Rating" /></td>
</tr>
</tbody>
</table>

#### How secure is the finding?

Findings from this study have high security. The study was a large and well-designed clustered randomised controlled trial (RCT). It was an effectiveness trial, which means it aimed to test the intervention under realistic conditions in a large number of schools. Relatively few pupils were lost to the analysis and the pupils who were allocated to receive the intervention were similar to the pupils in the comparison group. There were no substantial threats to the validity of the results.

#### How much does it cost?

The cost of delivering the intervention to two classes of Year 5 pupils is approximately £1,900, or £32 per pupil. The majority of this is to contribute towards CSC’s costs of delivering the chess lessons (£1,200) and setting up the after-school chess club (£600).

#### EEF Commentary

We funded this project because existing evidence, including a study from Italy, suggested that playing chess in schools could improve maths outcomes, but there had been no high quality evaluations done in the UK. The Chess in Primary Schools intervention was already being delivered in the UK and was affordable to schools and easy to implement.

Our evaluation was of high quality, and provided no evidence that Chess in Primary Schools improved attainment. This might be considered unexpected, given the existing evidence. However, unlike previous studies, this trial measured the impact on attainment after one year rather than straight after the intervention, because we were interested in whether playing chess would have a lasting impact on attainment. This might account for the difference in results.

Currently our view is that schools should not expect chess classes or chess clubs to raise pupil attainment in the medium or long term. However, the trial also suggested that playing chess, and even replacing some lessons with chess (although not Maths or English) had no negative impact on the pupils in the study, and so schools that wish to introduce chess clubs for reasons other than attainment, or are already running them, should not be discouraged from doing so.