

## Thinking, Doing, Talking Science (re-grant)

Thinking, Doing, Talking Science (TDTS) is a professional development programme designed to improve Year 5 science outcomes by making science lessons more effective. Teachers are trained to develop and teach challenging lessons that incorporate more practical activities, deeper thinking and discussion, and enquiry-based learning.

subject  
**Science**

key stage  
**Key Stage 2**

## EEF Summary

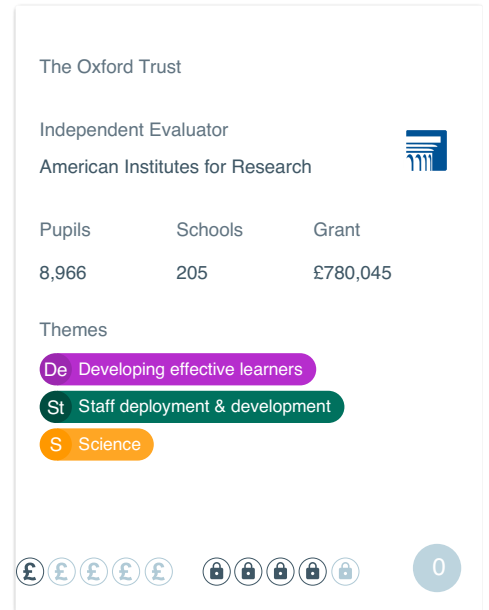
In 2012, the EEF funded a trial of TDTS in 40 schools. Year 5 pupils whose teachers received five days of TDTS training over the course of a year were compared with Year 5 pupils whose teachers did not.

The TDTS pupils made three additional months' progress, on average, in science, with a particularly positive effect for girls and pupils with low prior attainment. The programme appeared to have a positive impact on attitudes to science and there were also some indications that the approach was particularly beneficial for pupils eligible for free school meals.


Following these results, the EEF funded a larger evaluation of a new scalable version of TDTS. This second trial took place in 205 schools, with Year 5 teachers receiving the TDTS training over four days rather than five. It found no evidence of an impact on pupils' science attainment, on average. However, among children eligible for free school meals, those in the TDTS schools made a small amount of additional progress in science. The trial also found evidence that pupil interest in, and self-efficacy towards, science increased.

There were some important differences between the two models of TDTS - introduced to ensure the programme could be scalable - which might explain the different results. The second, larger trial used a different delivery model for the teacher training. Rather than doing the training directly, the programme developer recruited new trainers, who were trained to deliver the TDTS programme to teachers. The team delivering the teacher training were therefore doing so for the first time, unlike in the original, smaller trial. Teachers in the second trial also received four days of training rather than five, and funding for two additional days of preparation per teacher (in the form of cover costs) was cut.

Given the positive attainment results from the first trial, and the promising outcomes for pupils eligible for free school meals in the second trial, alongside the positive impacts on attitudes, TDTS will remain on the EEF promising project list. The EEF will explore options for a scalable model that maintains the impact seen in the first trial.



## Research Results

Outcome/Group	Impact - the size of the difference between Thinking, Doing, Talking Science (re-grant) pupils and other pupils	Security – how confident are we in this result?
Science	0 Months' Progress	
Science (FSM)	+1 Months' Progress	N/A

Were the schools in the trial similar to my school?

- There were 205 schools in the trial, located across the country.
- 152 of the 205 were Good or Outstanding Schools.
- 27.4% of the pupils in the intervention schools were Ever FSM

Could I implement this in my school?

- The 4-day programme is available to buy from Science Oxford. Details for academic year 2019-20 will be launched shortly at [thinkingdoingtalkingscience.org](http://thinkingdoingtalkingscience.org).
- The next instance of the 4-day programme runs as a residential course in York: book [here](#). The cost is £1280 + VAT but bursaries are available to state-funded schools for £1080.
- The training is suitable for teaching staff, NQTs, senior leadership and science co-ordinators.

 delivered by  
**Teachers**

 participant group  
**Whole Class**


 intervention length  
**1 Year**

How much will it cost?

The average costs of TDTS for one teacher was around £1,854, or £29 per pupil when averaged over three years.

 Cost per pupil  
**£29**

 No. of Teachers/TAs  
**All Y5 teachers**

 Training time per staff member  
**4 Days**

Schools 205	Pupils 8,966	Key Stage Key Stage 2
Start date September 2016	End date December 2018	Type of trial Effectiveness Trial

## Evaluation Conclusions

1. There is no evidence that TDTS had an impact on pupils' science knowledge attainment, on average. This result has a high security rating.
2. Among children receiving free school meals, those in TDTS schools made a small amount of additional progress compared to those in other schools. However, this finding is not statistically significant". This means that the statistical evidence supporting the impact finding does not meet the threshold set by the evaluator to be convincing.
3. The programme led to small increases in pupil interest in science and self-efficacy for science, as measured by pupil surveys.
4. Teachers who received TDTS training reported confidence in their understanding of, and ability to apply, the strategies they had learned. They felt that those strategies required minimal extra time to implement.