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Cognitive Science Teacher Choices: Using examples to teach grammar to Year 7

Submission date	Recruitment status	[_] Prospectively registered
21/03/2024	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
03/04/2024	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
03/10/2025	Other	

Plain English summary of protocol

Background and study aims
The Education Endowment Foundation (EEF) has commissioned the National Foundation for Educational Research (NFER) to undertake a randomised controlled trial (RCT) as part of their 'Teacher Choices' programme. 'Teacher Choices' trials explore the everyday choices teachers make when planning lessons and supporting pupils. Teacher Choices research aims to investigate the impact of these different day-to-day pedagogical practices on pupil learning and to generate evidence that can be readily applied by teachers in the classroom. This is a new and developing strand of EEF projects. This 'Teacher Choices' project is about using cognitive science approaches in the classroom. Using worked examples is a teaching approach grounded in cognitive science, with a strong evidence base in maths and science education. English teachers commonly use examples and many are interested in using cognitive science in their teaching. This trial seeks to understand how cognitive science principles can support English teachers in using examples. It compares different ways to use examples to teach grammatical constructions to enhance writing in Year 7 English.

Who can participate?
Year 7 teachers and pupils (aged 11-12 years old) in English departments in schools in England

What does the study involve?
The trial will compare three different approaches to using examples in short lesson segments in English classes to determine which one is most effective:
1. Systematic Worked Examples Structured use of worked examples, taught as a separate 'starter' twice a week. Pupils will learn to construct each grammar pattern using a sequence of steps purposefully.
2. Responsive Worked Examples Responsive use of worked examples, with teachers integrating worked examples within their teaching sequence, based on curriculum and pupil needs. Pupils will learn to construct each grammar pattern using a sequence of steps purposefully.
3. Non-worked Examples Structured use of non-worked examples, taught as a separate 'starter' twice a week. Pupils will learn to analyse examples to identify grammatical patterns and explore their effect on the reader.

What are the possible benefits and risks of participating?
The trial aims to provide evidence that will be useful for teachers, departments and schools when making decisions about their teaching. A school's participation will help to strengthen the evidence of the relationship between teachers' choices to pupils' attainment. By participating in the trial, teachers will receive example texts to support the teaching of grammar patterns for writing, and written guidance to support their allocated teaching approach. Teachers will also receive the trial report which will describe how these different approaches related to pupil attainment. It is hoped that these resources will be useful for guiding teaching in the future. Schools that complete all the trial requirements will receive a payment of £100 per participating teacher.

There are no anticipated risks to taking part. The activities are classroom-based and do not involve sensitive material. The research team are fully DBS-checked and trained in safeguarding.

Where is the study run from?
The Education Endowment Foundation (EEF) has commissioned and funded this study. The NFER is conducting the evaluation and working in partnership with the University of Exeter, and with the University of Birkbeck and University College of London (UCL) through the Centre for Educational Neuroscience.

When is the study starting and how long is it expected to run for?
September 2023 to July 2024. The trial will recruit from January 2024, and the approaches will be implemented in schools during the summer term of 2024.

Who is funding the study?
Education Endowment Foundation (EEF)

Who is the main contact?
Sarah Millar, the NFER Researcher at teacherchoices@nfer.ac.uk

Contact information

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Public

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Additional identifiers

Study information

Scientific Title
Cognitive Science Teacher Choices: Using examples to teach grammar to Year 7 (a Randomised Controlled Trial)

Acronym
CSTC

Study objectives
The trial tests three different approaches to using examples to teach Y7 grammar:
1. Systematic use of worked examples
2. Responsive use of worked examples
3. Use of non-worked examples

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 11/12/2023, IOE, UCL's Faculty of Education and Society (20 Bedford Way, London, WC1H 0AL, United Kingdom; +44 (0) 20 7679 2000; researchethics@ucl.ac.uk), ref: REC1914

Primary study design
Interventional

Study design
Three-arm randomized controlled trial with random allocation at the teacher-class unit level

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Correct use of grammar when writing in English

Interventions
This evaluation is a randomised controlled trial which aims to measure the impact of three different approaches to using examples to teach Y7 grammar on pupil writing composition.

The research design is a three-arm trial with randomisation of teacher-class units. Each unit will be randomly allocated to one grammar teaching approach to use throughout one term (summer 2024) and asked to implement it for each of their Year 7 English classes. The three grammar teaching approaches are:

1. Systematic use of worked examples
2. Responsive use of worked examples
3. Use of non-worked examples

What will the project involve for teachers, schools and pupils?
Year 7 teachers will be randomly allocated by NFER to one of the three approaches and asked to implement the approach for each of their Year 7 English classes. Teachers will be given a short teacher guide to enable them to implement the approach.
During the summer term 2024, Year 7 teachers will be expected to use examples to teach Year 7 grammar for ten weeks as follows:
• content: grammar patterns for expanding noun phrases in narrative description (5 weeks, April – May 2024), and grammar patterns for clauses/sentences in persuasive writing (5 weeks, June – July 2024).
• frequency: twice a week, with each session lasting 15 minutes.
• use of examples: in line with their randomly allocated approach (see 'What is this Teacher Choices Trial project' for details of each approach).

Schools will be asked to administer a bespoke writing test towards the end of the summer term to help assess which of the three approaches to teaching grammar is most effective. To support the analysis, there will also be a short grammar assessment halfway through the term, based on teaching up to that point. There will be no specific cost to schools for participating apart from staff time to support the trial. At the end of the trial, schools will receive a payment of £100 per participating teacher as a 'Thank You' for the time taken in being involved in the trial. Which schools and teachers can take part? The trial will involve Year 7 teachers in English departments from 65 state-funded secondary schools. Ideally, all Year 7 English teachers and classes in each school will participate (including where a teacher teaches more than one Year 7 English class). However, it is appreciated that there are many burdens on schools. Some schools may wish to participate with some but not all of the teachers. Each participating teacher in the trial will be allocated to a single grammar teaching approach. Where classes are taught by more than one English teacher, the study team will check whether this allows teachers to be allocated to a single approach, and will contact the school to discuss any classes where this is not possible. To join the trial, the headteacher will sign up, with the head of English or another appropriate colleague being the main contact, and individual Year 7 English teachers will then take part.

What will the evaluation involve for teachers and schools? Joining the trial: At each school, the headteacher will sign the online Memorandum of Understanding (MoU) and nominate the head of the English department or another appropriate colleague as the point of contact for the trial.

Pupil and teacher data: NFER will provide a template on the secure school portal for teachers to provide the data required for the trial. This will include Year 7 class lists for each teacher involved in the trial, information about ability groupings, teacher details, and UPN, name, and date of birth for each pupil in the selected classes. The UPN provided will be used by NFER to collect the pupil's gender, Key Stage 2 (KS2) English attainment data, free-school meal (FSM) eligibility, and English as an Additional Language (EAL) status from the Department of Education's (DfE) National Pupil Database (NPD).

Random allocation: Teachers will be randomly allocated by the NFER to one of the three approaches to be used with each of their Year 7 classes twice per week for the first ten weeks of the summer term. This means that teachers in the same school may be asked to use different approaches. It is very important that teachers do not switch approaches with another teacher in their school. This is to ensure that the research team can properly understand the impact of each approach.

Follow-up data: Teachers will be asked to administer a bespoke English writing test, devised by NFER, to participating pupils towards the end of the summer term. Teachers will also be asked to undertake a short assessment (20-30 minutes) with their class halfway through the term, based on teaching up to that point, and to provide the results to NFER. It is important to have assessment data for every participating pupil in the trial. NFER will share the results from the assessments with each participating school.

Evaluation materials: All participating teachers will be asked to complete a short survey before the summer term and another survey at the end to give their perspectives. Teachers will be expected to complete a brief online form each week on how frequently the approach was used in lessons. Some teachers and heads of English departments will also be invited to take part in case studies where NFER researchers will visit the school to observe the delivery of their assigned approach to inform contextual understanding. The visits will also gather views from teachers and pupils on the approaches being piloted and their experience of being part of the trial.

How will the findings be used? All teachers involved will receive a summary of the trial findings and this will also be freely available on the NFER and the EEF websites.

Who needs to give an agreement for participation in the trial?
Schools will join the trial once their headteacher has signed the MoU and will be provided an information sheet to be passed on to Year 7 English teachers. Schools will be provided with a letter for parents that informs them about the study and their child's participation. Schools should share the letter with parents/carers of the pupils in the participating Year 7 classes.

In January 2024, the school will share pupil names, date of birth and UPN for all participating pupils, as well as teacher details and information about ability groupings.
In March 2024, teachers are to complete a short survey on their current classroom practice and their confidence in teaching grammar. Participating English teachers are to prepare lesson plans for the summer term using the guidance document according to their allocated approach.
April to July 2024, teachers use the allocated examples to teach Year 7 grammar for ten weeks.
May 2024, Halfway through the term, classes complete a short grammar assessment (20-30 minutes) and send the test papers to NFER.
June-July 2024, Schools are to administer the bespoke English writing test (30-40 minutes) to participating pupils. Teachers to complete a short online survey on implementing the approach to teaching grammar.
September 2024, the payment of £100 per participating teacher made to all schools once the trial requirements are fulfilled.
March 2025, the schools will receive the summary report from the trial.

What happens if a school, teacher or pupil wants to withdraw from the trial?
A school or teacher can withdraw from the trial and/or from their data being used in the trial at any time until 1 September 2024, at which point the data will have been pseudonymised and analysed. Schools must notify the NFER of any teachers who withdraw from the study. Similarly, parents can choose to withdraw their child from the data collection of the trial at any time until

1 September 2024. They can do this by returning the form at the bottom of the parent letter to their school. Schools must not provide data about children whose parents withdraw them from the data collection. If the withdrawal takes place after the study commences, schools must notify NFER of such pupils to be removed from datasets and subsequent analysis immediately. How will the NFER use and protect the data collected? All data gathered during the trial will be held in accordance with the Data Protection Act 2018, and GDPR and will be treated in the strictest confidence by the NFER. No teacher or pupil-level data will be shared with the EEF. No school, teacher or pupil will be named in any report arising from this work. A School and Teacher Privacy Notice for the study is available here. A Parent/Carer Privacy Notice for the study is available here.

Intervention Type
Behavioural

Primary outcome(s)
Writing composition (combined attainment in (1) sentence structure and text organisation, (2) punctuation and (3) composition and effect, across two text types) measured using the Text-Type-Specific Writing Assessment (TSWA), a bespoke assessment developed by NFER, at the end of the trial

Key secondary outcome(s)
1. Knowledge of grammatical constructs (focusing primarily on the noun phrase and its constituent parts) measured using the Noun Phrase Grammar Assessment (NPGA), a bespoke assessment developed by NFER, at the end of the first teaching block

Completion date
31/07/2024

Eligibility

Key inclusion criteria
1. Year 7 (age 11-12 years) pupils
2. Eligible participants are teachers of Year 7 English and their pupils in state-funded secondary schools
3. All state-funded secondary schools in England are eligible to participate in the trial

Participant type(s)
Learner/student

Healthy volunteers allowed
No

Age group
Child

Lower age limit
11 Years

Upper age limit
12 Years

Sex
All

Total final enrolment
8930

Key exclusion criteria
Not meeting the participant inclusion criteria

Date of first enrolment
01/01/2024

Date of final enrolment
31/03/2024

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Education Endowment Foundation
5th Floor, Millbank Tower, 21–24 Millbank
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Study participating centre
National Foundation for Educational Research
The Mere, Upton Park
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Sponsor information

Organisation
Educational Endowment Foundation

Funder(s)

Funder type
Research organisation

Funder Name
Educational Endowment Foundation

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from info@eefoundation.org.uk

Education Endowment Foundation data archive repository. The Education Endowment Foundation facilitates lawful access to the data archive for secondary analysis.

The type of data that will be shared: Student demographic characteristics and their performance on two English assessments.

Timing for availability: After the end of the study and archiving of data (expected June 2025).

Whether consent from participants was required and obtained: Yes, schools, teachers and parents of participating pupils had to sign a consent form.

Comments on data anonymization: Pupil direct identifiers are discarded before data is archived.

Any ethical or legal restrictions: Ethical approval has been granted. No ethical or legal restrictions exist.

IPD sharing plan summary
Stored in publicly available repository, Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Funder report results	version 1.1.0	30/09/2025	03/10/2025	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes