



Grammar and Writing in England's National Curriculum

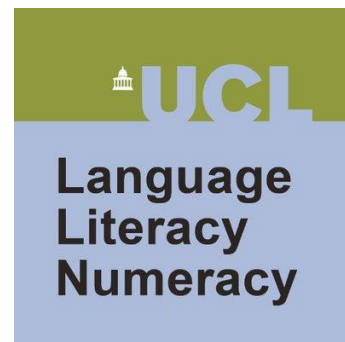
A Randomised Controlled Trial and
Implementation and Process
Evaluation of *Englicious*.

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Ian Cushing was involved in the manualisation of the intervention. Luke Pearce did two school visits.



¹ Apart from the PI Dominic Wyse, and Ian Cushing and Luke Pearce, the research team members are listed alphabetically by surname. The members of the research team made a range of different contributions to the research and to this report. Bas Aarts is the developer of *Englicious*.

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Executive Summary

One of the most important elements of primary education is to ensure that pupils learn to write. One aspect of learning to write is understanding of the grammatical conventions of written English. Previously published robust studies of teaching grammar to improve writing have not shown significant positive effects on pupils' writing, other than for an approach called *sentence combining*. Other approaches to teaching writing have shown significant positive effects on pupils' writing, such as adoption of process writing approaches; writing strategy instruction; and writing across the curriculum.

The national curriculum in England, implemented from 2014 onwards, requires primary school pupils to learn about grammatical terms in order to improve their writing. The amount of attention to grammar in the 2014 curriculum far exceeds the attention to grammar in previous versions of the national curriculum.

The research that forms the basis of this report was the first research to use a randomised controlled trial (RCT) and implementation and process evaluation (IPE) design to evaluate England's 2014 national curriculum. Prior to the research featured in this report no research worldwide had examined the impact of grammar teaching on the writing of six-year-old and seven-year-old pupils using this kind of robust design.

The Intervention

The research evaluated a new approach to teaching grammar and writing, informed by modern linguistics, called *Englicious*. The Englicious website and its resources are designed to help teachers deliver England's national curriculum requirements for English grammar, and to prepare their pupils for the Grammar, Punctuation and Spelling tests which are optional at KS1 (pupils age five to seven) and statutory at KS2 (in Year 6, pupils age 10 to 11). The Englicious intervention, for which a teachers' manual was created for the research, consisted of 10 lessons that involved explicit teaching of grammatical terms (required by the national curriculum) then, at the end of each lesson, the pupils applied this learning about grammar to a piece of writing that they carried out.

The Research Design

Year 2 teachers (teaching pupils aged six to seven) in 70 schools were randomly allocated to either the Englicious intervention group of schools or to the control group of schools. Ultimately, test data from 1,246 pupils in 63 schools were analysed. The primary, or main, test measure used to evaluate the impact of Englicious was a test of pupils' narrative writing. The secondary test measure, which was more focused on grammar, was a sentence generation test which required pupils to generate sentences based on a two-word prompt.

A qualitative IPE was carried out using questionnaire surveys of teachers, and visits to a random selection of 12 case study teachers, six teachers in control schools and six in intervention schools. These visits to schools included interviews and observations of grammar lessons.

The Findings of the Research

The main findings of our research show that there was effectively no impact on pupils' narrative writing ($d=0.04$) which was our primary outcome measure. This is consistent with previous studies in the field of grammar for writing which have not found an impact. The study finding does not offer support for grammar teaching to improve writing. There was a larger effect on pupils' generation of sentences ($d=0.14$), our secondary outcome measure. Neither of the effects were statistically significant. Nevertheless, we view the effect on the sentence generation measure as encouraging because of its magnitude relative to the achieved statistical power for an effect of this size. We argue that a positive effect on sentence generation could have been a result of pupils' manipulation of words, phrases and sentences, and the connections made between grammar teaching and pupils practising writing, that are part of the intervention.

Conclusions

Although we found some evidence that the grammar content of England's national curriculum can be taught in a more beneficial way, the main outcome of our research leads to questions about whether the type and amount of grammar content in the national curriculum is the most appropriate focus to help pupils learn to write.

As a result of the findings from our research, and the findings from previous research on grammar and writing, this report concludes that the lack of robust research evidence to underpin the grammar requirements in England's national curriculum is a concern. We argue that a review of the requirements for grammar in England's national curriculum is needed in order to evaluate the programmes of study in relation to robust research evidence on how primary pupils can be best taught to write.

Recommendations

- The grammar requirements in England's national curriculum should be reviewed, in particular to evaluate their appropriateness for contributing to the improvement of pupils' writing.
- Further research should explore the merits of the manipulation of words, phrases and sentences closely connected to other evidence-based practices for the teaching of writing, within grammar and writing lessons.

Introduction

One of the most important elements of primary education is to ensure that pupils learn to write. Not acquiring writing, and reading, to age-appropriate levels can have a profound impact on life-chances, including lifetime earnings (The Government Office for Science, 2008). Learning how to compose the grammar of written sentences is a vital part of learning to write. However, in 2001 a substantial literature review of published research and other relevant evidence concluded that there was no robust evidence that traditional grammar teaching (that includes a strong focus on the naming of grammatical terms) had a positive effect on primary pupils' writing (Wyse, 2001), a view subsequently confirmed in a systematic review (Andrews et al., 2004). Research using experimental designs, particularly randomised controlled trials (RCTs), has not to date shown positive effects on primary age pupils' writing as a result of the teaching of grammar. Tertiary reviews, and systematic reviews and meta-analyses, of experimental trials have concluded that teaching grammar does not improve pupils' writing (e.g. Graham et al., 2012).

A range of interventions have been devised to support pupils' written text production. These interventions span word, sentence and text level aspects. Meta-analyses have found positive effects for *sentence combining* and negative effects for explicitly teaching grammar (Koster, Tribushinina, De Jong & Van den Bergh, 2015; Graham, et al., 2012; see also Graham & Perin, 2007). Sentence combining requires pupils to combine sentences in various ways, for example through being able to combine two grammatically simple sentences into a complex sentence using linking words such as *because*, *when*, etc. The only positive effects for the teaching of grammar for writing have been found in a single case meta-analysis (Rogers & Graham, 2008) and in one study with older secondary school pupils in England, although the "contextualised teaching of grammar" approach (Myhill et al., 2012, p. 139) in this study was not found to be effective in primary schools (Torgerson et al., 2014; Tracey et al., 2019). The research has led researchers to conclude that traditional grammar instruction that is focused on developing meta-linguistic knowledge about grammatical terms and rules is not a means to improve writing (Troia, 2014).

A limitation in the previously published research on grammar teaching is the failure to examine the impact of writing interventions during the initial stages of pupils learning to write. Pupils' understanding of the grammar of written language, and about sentence combining, are important predictors of writing proficiency (Berninger et al., 2011). The ability to *combine* sentences that use conventional grammar develops at around the age of seven for most pupils. Consideration of the initial stages in the development of written text production offer the opportunity to examine the ways in which pupils' written grammatical competence can be developed.

England's national curriculum

The emphasis on grammar in England's current national curriculum, implemented from 2014 onwards, is more than any previous national curriculum in England. One aspect of this emphasis has been the statutory testing of grammar which has added to the requirements for teachers to teach grammar. The emphasis on grammar, and its purpose, is also clear from its first mention in the national curriculum document: "Pupils should develop the stamina and skills to write at length, with accurate

spelling and punctuation. They should be taught the correct use of grammar. They should build on what they have been taught to expand the range of their writing and the variety of the grammar they use.” (DfE, 2013, p. 10, underline added). In Year 1 (age five to six) pupils are expected to be “learning the grammar for year 1 in English Appendix 2” (op cit., p.26), and in Year 2 the grammar requirements are specified as shown in Table 1.

Table 1
Writing – vocabulary, grammar and punctuation statutory requirements for pupils in Year 2 in England (op cit., p. 33).

Statutory requirements	
Pupils should be taught to:	
<ul style="list-style-type: none"> • develop their understanding of the concepts set out in English Appendix 2 by: <ul style="list-style-type: none"> ○ learning how to use both familiar and new punctuation correctly (see English Appendix 2), including full stops, capital letters, exclamation marks, question marks, commas for lists and apostrophes for contracted forms and the possessive (singular) • learn how to use: <ul style="list-style-type: none"> ○ sentences with different forms: statement, question, exclamation, command ○ expanded noun phrases to describe and specify [for example, the blue butterfly] ○ the present and past tenses correctly and consistently including the progressive form ○ subordination (using when, if, that, or because) and co-ordination (using or, and, or but) ○ the grammar for year 2 in English Appendix 2 ○ some features of written Standard English • use and understand the grammatical terminology in English Appendix 2 in discussing their writing. 	

In Appendix 2 of the national curriculum there are four and a half pages of statutory requirements for the detail of content to be covered in relation to grammar for pupils from Year 1 to Year 6, including terminology to be learned. Year 2 pupils (aged six to seven) were the sample for our research. In Year 2 the grammar terminology includes the items listed in Table 2.

Table 2
Terminology specified in England’s national curriculum to be taught in Year 2.

Terminology for pupils	noun, noun phrase statement, question, exclamation, command compound, suffix adjective, adverb, verb tense (past, present) apostrophe, comma
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A relatively recent innovation is an approach to grammar teaching called Englicious (www.englicious.org). Englicious is a web-based resource underpinned by the aim to

make learning about grammar fun and appealing. For teachers the Englicious website provides a wide variety of teaching materials, including lesson plans, interactive exercises, projects, videos, a glossary, etc., as well as background CPD materials to improve their understanding of grammar. The site and its resources are designed to help teachers deliver the national curriculum requirements for English grammar, and to prepare their pupils for the Grammar, Punctuation and Spelling tests which are optional at KS1 and statutory at KS2. Englicious is informed by a view of modern linguistics (Aarts, 2011; Aarts, Mehl and Wallis, 2016; Aarts and Smith-Dennis, 2018; Aarts 2019; Wallis, Cushing and Aarts, 2019, Aarts, Cushing and Hudson, 2019), and makes use of the technologies available through tablets, apps and interactive whiteboards. In relation to interventions in previous research the Englicious approach is different because it combines formal grammar teaching and explicit links to pupils' writing within its lessons which aim to be more *hands-on* than many traditional approaches.

As far as we are aware the research carried out for this report was the first in the world to use a RCT and qualitative process evaluation with a focus on explicit teaching of grammar with six-year-old and seven-year-old pupils. It was also the first research to use an RCT design to evaluate a key feature of England's national curriculum. And it was the first robust evaluation of Englicious, a new approach to teaching grammar which carefully links explicit teaching about grammar with teaching about aspects of writing.

Methods

The research was an evaluation of the Englicious programme, which combined a RCT with a qualitative Implementation and Process Evaluation (IPE). The research design and its data analysis plan were published in protocol documents prior to completion of the research (Anders et al., 2019, and Anders et al., 2021). The research was set in the context of grammar as a major new element in England's national curriculum first implemented from 2014. The quantitative impact evaluation had the following elements:

- a two-armed, school-level cluster randomised trial design
- randomisation stratified by the proportion of students eligible for free school meals (FSM); proportion of EAL students; and the randomisation batches (batches 1 and 2. pre-COVID; batch 2. post-COVID – see “Design of the Randomised Trial” below for further details)
- the primary outcome measure was pupils' narrative writing attainment measured using a version of the *GL Progress in English* (PiE) assessment of writing
- the secondary outcome was a bespoke *Sentence Generation* (SG) measure.

The research originally aimed to recruit Year 2 teachers and their pupils in 60 schools in London, and ultimately some adjacent counties, to be randomly allocated to the following conditions in equal proportions:

- **Intervention:** Receipt of Englicious training in December 2019 or January 2020 (depending on randomisation batch)

- **Waitlist Control:** ‘Business as usual’ teaching of grammar and writing until after outcome data collection in Summer 2021

The qualitative implementation and process evaluation (IPE) design featured teacher surveys and case studies of 12 teachers selected at random in six intervention schools and six control schools.

The research questions for the study as a whole, RCT and IPE, were as follows:

1. To what extent is the grammar intervention Englicious (EI) effective in improving pupils’ writing?
2. What are the main implications for teacher practice as a result of implementing EI, and, more generally, for evidence-informed teaching of writing?
3. In what ways do the outcomes of the research have implications for the teaching of writing in the national curriculum for primary schools in England?

Manualising the Englicious Intervention

Four teachers who were not involved in the research were recruited to work with research team members Bas Aarts and Ian Cushing to develop a manual that was to be used by the teachers selected at random to be the intervention schools. The teaching material required for the intervention was specially created for the research project using Englicious resources.

The manual described the aims and objectives of the project to teachers, and explained to them the Englicious website, how to create a free account, and how to navigate the site. The manual also described the pedagogical principles of Englicious and its blend of decontextualised and contextualised grammar teaching. It explained that the approach to grammar is descriptive, not prescriptive, and that it emphasises a playful approach to grammar learning for pupils of Year 2.

The intervention comprised ten lessons on the following topics:

- Lesson 1: Nouns
- Lesson 2: Adjectives and expanded noun phrases
- Lesson 3: Verbs
- Lesson 4: Adverbs
- Lesson 5: Present tense
- Lesson 6: Past tense
- Lesson 7: Sentence patterns
- Lesson 8: Linking (1)
- Lesson 9: Linking (2)
- Lesson 10: Consolidation

All the lesson plans had a similar structure: they start with a ‘starter’ activity which is designed to initiate discussion of a particular topic, e.g. in a discussion of nouns, pupils may be presented with images of objects and asked ‘What kinds of things do these words represent?’. The teacher then explains a particular grammatical term using age-appropriate examples, illustrated with images, after which the pupils’

learning is consolidated using practice material from Englicious. In the final part of each lesson pupils are asked to use the grammar they have been taught in a short piece of writing, which is then shared and discussed in the group as a whole. Lessons ended with a short summary of what had been learnt.

The manual had a Frequently Asked Questions section and an extensive Glossary of grammatical terms.

Design of the Randomised Trial

Randomisation was carried out at the school/teacher-level (only one teacher was recruited within each school, hence these two are indistinguishable for research design purposes). It was not deemed practical to use pupil-level randomisation for an approach that requires training of teachers, since this would require schools to reorganise classes for our research, to which they would be very unlikely to agree. Randomisation was always planned to be carried out in two batches for reasons of delivery and recruitment practicality, with the aim being that each batch be the same size.

60 Year 2 teachers (pupils aged 6-7) were to be randomly allocated to two groups (Englicious Intervention (EI) treatment and waitlist control comparison) in equal proportions. However, initially due to challenges with recruitment, and then due to important changes to delivery caused by COVID-19 disruption, ultimately randomisation was carried out as follows:

- Randomisation Batch 1 (November 2019): 24 schools were allocated in equal proportions (12 to treatment; 12 to comparison)
- Randomisation Batch 2 (January 2020): 40 schools were allocated in equal proportions (20 to treatment; 20 to comparison)

This provided a sample of 64 schools, slightly above our 60-school recruitment target. We moved ahead with intervention delivery in school term Spring/Summer 2020 based on these allocations. However, COVID-19 disruption meant that this was abandoned, and delivery was deferred to Summer term 2021 instead. This meant that the planned sample of pupils would all be too old to take part in the planned delivery and, in a substantial number of schools, the participating Year 2 teacher would not necessarily be teaching Year 2 in Summer 2021. This change, and the COVID-19 disruption more generally, meant that 22 schools across Batch 1 and 2 schools (12 treatment; 10 control) decided not to take further part in the project.

Based on these changes it was necessary to re-start the research and hence re-collect pupil data and baseline assessment (PiE Short Writing Task; Sentence Generation Task). In addition, we discussed whether to re-randomise the remaining schools. Re-randomisation was rejected on the grounds that teachers allocated to the treatment group had received training and so it would not be realistic to treat them as true comparators if allocated to the comparison group in a randomisation. As such, remaining Batch 1 and 2 schools were retained in their allocated treatment group. Further recruitment was carried out in in Autumn 2020 and subsequent pupil data collection and baseline testing in Spring 2021 resulting in the following groups and allocations:

- Batch 1 (updated): 18 schools in equal proportions (9 treatment; 9 comparison)
- Batch 2 (updated): 24 schools with slightly fewer treated schools remaining (11 treatment; 13 comparison)
- Batch 3 (March 2021): 28 schools were allocated in equal proportion (14 to treatment; 14 to comparison)
- **Overall:** 70 schools (34 treatment; 36 control)

Randomisation within each batch was, as reported in the protocol, carried out within stratification blocks to reduce the risk of imbalance on important characteristics between our resulting treatment and control groups. These stratification blocks were formed by the intersection between equally sized high and low EAL proportion, and high and low FSM proportion groups.

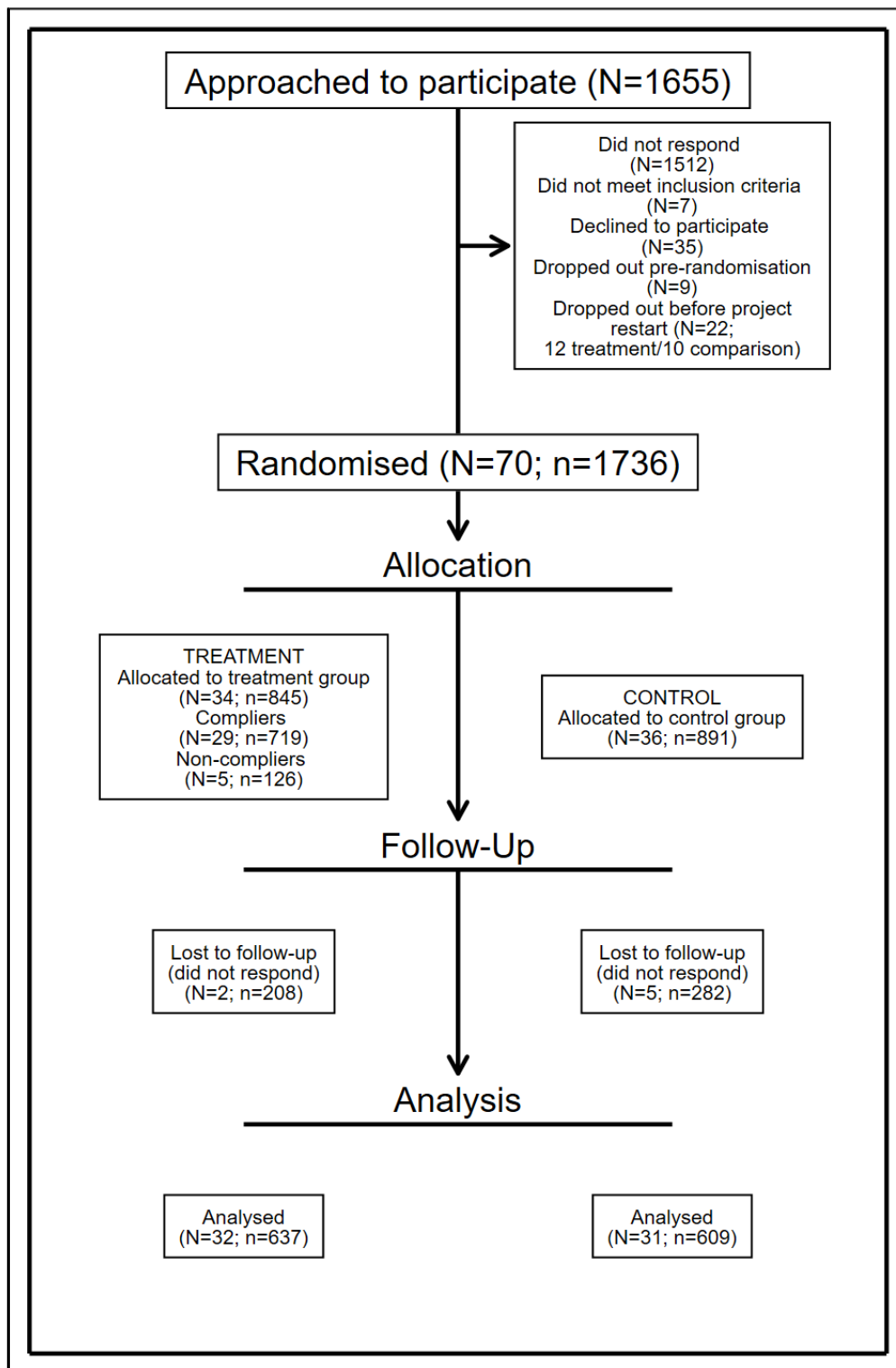
Sampling

The flow of participants through the study is detailed in Figure 1. Of the original 1,655 schools that were approached, 1,512 did not respond, seven did not meet the inclusion criteria, 35 declined to participate, nine dropped out pre-randomisation, and 22 were randomised but dropped out during the disruption to the project caused by COVID-19 restrictions.² In total, 70 schools agreed to participate in the trial, met the eligibility criteria, and provided the necessary data for randomisation to proceed. These schools were randomly allocated either to the intervention or the control group. At the point of the post-COVID randomisation, 845 pupils in 34 schools were allocated to the intervention group and 891 pupils in 36 schools to the control group.

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² Of these 22, 12 had been allocated to treatment and 10 to comparison in pre-COVID randomisation batches. These losses due to COVID disruption are the reason for unequal allocation by randomisation strata at point of the post-COVID randomisation.

Figure 1.
Participant flow diagram



Adapted from: www.consort-statement.org/consort-statement/flow-diagram

Data needed for the primary analysis were collected for 1,246 pupils in total, with 637 in treatment and 609 in control (see Table 3). This led to an attrition rate of 28 percent

of the total randomised sample. The control group had a higher attrition rate of 31.6 percent compared to the 24.6 attrition rate for the intervention group.

Table 3.
Pupil level attrition from trial

		<i>Intervention</i>	<i>Control</i>	<i>Total</i>
<i>Number of pupils</i>	<i>Randomised</i>	845	891	1,736
	<i>Analysed</i>	637	609	1,246
<i>Pupil attrition (from randomisation to analysis)</i>	<i>Number</i>	208	282	490
	<i>Percentage</i>	24.6	31.6	28.2

Measuring Pupils' Writing of Text and their Generation of Sentences

Robust assessment of writing in young writers is challenging because judgements about the overall quality of writing are subjective compared, for example, to assessments of single word reading. However, assessment of writing was central to the aims of this research. Two measures of grammar and writing were chosen. 1. a measure to assess pupils' writing through a narrative writing test: the Progress in English (PiE) test. A version of the PiE tests that had a standardised narrative writing element was used. This test requires pupils to do a piece of narrative writing based on a prompt (see the marking guide in Appendix 2 for more details). The long version of the PiE was chosen as the primary measure for the research because the key research question was whether grammar teaching could improve pupils' writing. 2. a measure to assess grammar through a bespoke Sentence Generation Test (SGT). The SGT was based on a test derived from a previously published study (Arfé, Dockrell & De Bernardi, 2016). The SGT required pupils to generate as many different sentences as they could that included the two words given as a prompt. The SGT was chosen because it could detect an important aspect of pupils' grammatical understanding.

These tests were designed to be appropriate to the age of the pupils involved, to avoid ceiling or floor effects, ensuring, for example, that there were items that all pupils should be able to make at least a good attempt at. Tests were carried out prior to the intervention starting, and after the end of the intervention.

PiE was the primary outcome measure of writing for this project. This is a standardised measure of pupils' writing that was also relevant to the national curriculum context of our research. We secured agreement from GL Assessment to use the element from their Progress in English (PiE) test that was focussed on writing. GL Assessment's more recent Progress Test in English (PTE) does not include a standardised writing element (partly because of the challenges posed by

assessing writing at this age), which is why we took this approach. The primary outcome measure for the research was the raw score on the longer writing task drawn from the GL Assessment Progress in English (PiE) test. The marking criteria for the writing task from PiE was composition and effect; text organisation; sentence structure; and vocabulary.

SGT was the secondary outcome measure for the project. This bespoke sentence construction test is based on that used by Arfé, Dockrell & De Bernardi (2016). This measure of pupils' writing competence relates to fluency in writing sentences, and the grammatical and semantic appropriateness of the sentences that pupils generate. One mark was awarded for each unique sentence produced for the assessment (zero marks in total if the sentence was not different from previous sentences); one mark was awarded if the sentence was written using standard English grammar; and one mark was awarded for semantic meaning (if the sentence made sense on its own). Inter-rater reliability for a measure of this type had previously been found to be good (94%) and test-retest reliability at a two-month interval was 0.62 (op. cit.). Our experience broadly bears this out: by double marking a 1% sample of our scripts we estimate an inter-rater reliability of this measure of 0.92 while the pre-/post-test correlation was estimated to be 0.50.

Pupils were tested twice: 1. Baseline: prior to the start of the intervention; 2. Immediate intervention effects: 1-2 weeks from the end of the intervention. This was a deviation from protocol in which we planned for more delayed testing but was necessary due to delivery alterations caused by COVID-19. Also due to alterations to delivery and continuing COVID-19 restrictions, both outcome and pre-test measures were administered by classroom teachers, which meant that administration was not fully blinded to treatment allocation. However, we argue that the nature of the tasks and the scripting of the introduction etc. minimised the potential effects of this on test performance among pupils in the class.

Tests were marked by a team recruited specifically for this purpose (largely drawn from doctoral students at UCL) as follows:

- Markers received training, given by the full-time researcher and the PI (as senior raters) on the marking of all tasks to ensure consistency in their approach. The training was a one-day live online session. The approach was set out in a Marking Guide which was shared with all markers (See Appendix 2). This was followed by practice marking of 4-5 scripts which were not part of the trial sample. These scripts were analysed for agreement and error patterns, including calculation of inter-rater reliability statistic compared to the agreed mark by senior raters. If inter-rater reliability was below 0.6 then further training was carried out with further 4-5 scripts analysed in the same way.
- A 20% sample of the first 100 scripts of each task marked by each marker was also marked by a second marker. If inter-rater reliability of these fell below 0.7 then a senior rater investigated, and further training was provided for the markers as appropriate (the training followed the approach above and then returned to the marker to repeat the initial 20% sampling process). If inter-reliability was above 0.7 in these checks, then that marker moved to 1% sampling of further scripts for double marking to monitor the remainder of the marking process.

- Markers were kept blinded from whether any given test they were allocated was treatment or control, since this would have had a substantial potential to introduce bias.
- Markers were allocated a mix of tests from treatment and control groups to reduce risk that tester effects could drive results at the margin.
- Markers marked in batches of different tasks to prevent the possibility of their perception of one task shaping their marking of another task, particularly across pre- and post-tests.

Qualitative Implementation and Process Evaluation (IPE)

The qualitative implementation and process evaluation (IPE) design featured three teacher surveys, and case studies of 12 teachers selected at random: six intervention schools and six control schools.

The IPE had the following research questions:

1. What are teachers' beliefs, knowledge and experience of teaching grammar for writing?
2. To what extent does the teaching in the intervention classes show fidelity to Englicious?
3. In what ways does the teaching in the intervention classes differ from the control classes?
4. How do Year 2 teachers deliver the requirements of grammar in England's national curriculum?

In the pre-COVID-19 part of the research, the school visits were completed by four members of the research team. One pair of researchers attended each visit, which allowed for views about, and understanding of, the lessons to be compared. The two observers had different expertise including expertise about primary teaching and the teaching of writing, and specialist knowledge about the design of the intervention. In the post-COVID-19 part of the research the visits were completed by one researcher. This change was made as part of a request to UCL's Ethics Committee to resume fieldwork on external sites and required an updated risk assessment (submitted February 2021). Our paired approach to conducting the lesson observations pre-COVID-19 had effectively enabled us to pilot our research instruments and this learning was used to further refine this method for activities completed as part of the project restart.

The teacher surveys were originally planned to be completed in hard copy in order to enhance response rates. Due to COVID-19 these documents, which did not require teachers to enter any personally identifiable information, were returned via email. Tables 4 and 5 summarise the teacher surveys.

Table 4.
Summary table of teacher survey data collected pre-COVID-19

	Teacher respondent group	Total no. of teachers	Total no. of completions	Distribution method	Return method	Completion period

Pre-intervention survey	Intervention & control	63	44	Email	Email & in-person collection	Mid-Jan – mid-Feb 2020
Mid-intervention survey	Intervention	31	20	Email	Email	March 2020

Table 5.
Summary table of teacher survey data collected post-COVID-19

	Teacher respondent group	Total no. of teachers	Total no. of completions	Distribution method	Return method	Completion period
Pre-intervention survey	Intervention & control	70	47	Email	Email	Late March – late April 2021
Mid-intervention survey	Intervention	33	19	Email	Email	Late May – mid-June 2021
End-of-intervention survey	Intervention	33	11	Email	Email	July 2021

12 teachers, approximately 20% of the teachers in the intervention and 20% in the control, were selected as the basis for 12 case studies. The samples of teachers were stratified by years of teaching experience, their school Ofsted grade, and percentage of free school meals in the school in order to achieve maximum variation in teacher characteristics across both intervention and control groups. A selection of teachers was then made by stratified random selection.

Each case study teacher was visited twice – once between the beginning and middle of the term of the intervention, and once towards the end of the intervention. The first visit consisted of the following elements: 1. an overview interview to collect relevant baseline information about the teacher and the school (approximately 20 minutes), and in the case of control schools to elicit their approach to teaching grammar; 2. an observation of at least one full lesson where the intervention, or other grammar teaching in the control schools, was the focus; 3. a concluding interview (approximately 30 minutes). This interview included the use of examples from the observed teaching as a stimulus to elicit greater depth of understanding about the implementation of the intervention or the grammar teaching in the control schools. In the intervention schools, the interview also elicited early reflections about the intervention.

The second visit consisted of 1. an observation of at least one full lesson where the intervention or other grammar teaching was the focus; 2. a concluding interview using examples from the observed teaching as a stimulus to elicit greater depth of understanding about the implementation of the intervention or the grammar teaching in the control schools (approximately 30 minutes). Different semi-structured interview

schedules were used to reflect the overview interview and the final interview. The interviews were audio-recorded and fully transcribed.

Observations of lessons were recorded as field notes (handwritten and/or using digital devices), and then transferred to a proforma as soon after the observation as possible. The proforma itemised the following areas and therefore served to direct the observational focuses: implementation environment, implementer characteristics, and participant characteristics. The areas were also reflected in questions guiding the observations, e.g. to what extent does the teacher's delivery reflect the intervention? What is grammar teaching like in the control group? What is the nature of the classroom environment and ethos including physical characteristics? In what ways does the teaching reflect the objectives of the lesson, as part of the intervention more broadly?; What is the nature of the pupils' response to the teaching?

The qualitative data sets consisted of 77 survey responses, 34 interviews, and 23 lesson observations. The breakdown of the survey responses is outlined in Tables 4 and 5. The breakdown of the interviews and observations was: school visit one: 11 first interviews, 12 lesson observations, and 12 final interviews; school visit two: 1 first interview (not completed at one school during visit 1), 11 lesson observations, and 11 final interviews (it was not possible to undertake visit 2 at one school).

Data Analyses

The procedures of the quantitative data analyses for the test measures were specified prior to this report in a statistical analysis plan (Anders et al., 2021). The analyses used a range of statistical methods in order to ensure robustness of the analyses. The primary and secondary analysis estimates included in this report are based on linear regression models adjusting for baseline covariates, with p-values and confidence intervals based on randomisation inference.

Further details about the methods and code used for all of the following analyses are available on request: balance of sample analyses; primary outcome (Progress in English test) analysis; secondary outcome (sentence generation) analysis; sensitivity analysis, of treatment indicator and covariates; robustness analysis to explore potential effects of pause and restart due to COVID-19; graphical analyses; subgroup analyses; missing data analysis; compliance analysis (more than plus or minus 15 minutes intervention lesson time); and effect size calculations.

A qualitative data analysis (QDA) plan was developed and used by the three members of the research team involved in the analyses of the survey, interview and lesson observation data sets. The research questions for the IPE, and for the project as a whole, were the main drivers for the analyses.

In order to analyse the survey data all of the information was entered into a series of six spreadsheet tabs. Quantitative data and qualitative data were allocated to separate spreadsheets. Short answer questions were quantified as frequencies of responses. Longer open text comments were listed in sequence then subject to qualitative data analysis coding to establish themes that were relevant to the IPE

research questions and the overall research questions for the project. Themes with the highest numbers of respondents' comments were prioritised for additional analysis which included triangulation and integration with the other qualitative data and analyses.

The QDA of observations and interviews data began with a reading of all data files in full (transcriptions of interviews; lesson observation proformas) and annotating with potential qualitative codes, particularly codes relevant to the main topics of the research questions.³

For the interview data the most relevant questions from the pre-observation and post-observation interviews for each school visit were identified for more detailed analysis in order to build cases for each teacher. The data for each selected interview question was systematically analysed by reading all of the responses in full and developing codes based on frequency of occurrence of respondents' points. Relevant sections from the lesson observation proformas were selected in order to triangulate the analyses of the interview data, and to further evaluate the teachers' views about grammar teaching and writing.

Finally, the outcomes of the analyses of interview data and lesson observation data were triangulated with the teacher survey data to enhance the validity of the QDA. This final phase of analysis involved confirming five main themes, that reflected the research questions, and ultimately served as a way of reporting the IPE findings in a way that reflected the effectiveness, strengths and weaknesses of the intervention in relation to the control conditions.

The research project was reviewed and approved by the UCL Institute of Education research ethics approval processes including a COVID-19 risk assessment for the fieldwork restart.

Results and Findings

Results - Quantitative impact evaluation

Pupil and school characteristics

Tables 6 and 7 present the baseline characteristics of treatment and control pupils.

Table 6.
Baseline characteristics of groups as randomised

	Control		Intervention		
<i>Baseline variable</i>	<i>n (missing)</i>	<i>Mean/ Proportion</i>	<i>n (missing)</i>	<i>Mean/ Proportion</i>	<i>Standardised difference</i>

³ Due to shortening of the timeline for the QDA, caused by COVID-19 pressures, all data analyses were facilitated by standard office applications, MS Excel and Word, rather than through use of specialist qualitative data analysis software.

PIE Short/ Baseline Score	794 (97)	5.76	774 (71)	5.98	-0.063
SG Baseline Score	759 (132)	14.72	764 (81)	13.81	0.092
Female	891 (0)	0.49	845 (0)	0.51	-0.040
Ever FSM	891 (0)	0.21	845 (0)	0.28	-0.163
English as an Additional Language	891 (0)	0.40	845 (0)	0.45	-0.101
Pre-COVID PIE Baseline (School- level)	22 (0)	6.43	20 (0)	6.33	0.054
Pre-COVID SG Baseline (School- level)	22 (0)	15.49	20 (0)	14.92	0.124

Table 7.
Baseline characteristics of groups at analysis

<i>Baseline variable</i>	Control		Intervention		<i>Standardised difference</i>
	<i>n (missing)</i>	<i>Mean/ Proportion</i>	<i>n (missing)</i>	<i>Mean/ Proportion</i>	
PIW Short/ Baseline Score	609 (0)	5.82	637 (0)	5.98	-0.046
SG Baseline Score	609 (0)	15.26	637 (0)	14.07	0.120
Female	609 (0)	0.49	637 (0)	0.50	-0.020
Ever FSM	609 (0)	0.16	637 (0)	0.26	-0.248
English as an Additional Language	609 (0)	0.39	637 (0)	0.44	-0.101
Pre-COVID PIW Baseline (School- level)	19 (0)	6.13	20 (0)	6.39	-0.151
Pre-COVID SG Baseline (School- level)	19 (0)	15.45	20 (0)	14.97	0.103

At the point of post-COVID randomisation, the control group had higher Sentence Generation (SG) baseline scores (in baseline exercises carried out both pre- and post-COVID, where applicable) compared to the intervention group (most apparent pre-COVID). The control group also had higher Progress in English (PiE) baseline scores pre-COVID compared to intervention groups. The intervention group had slightly higher PiE baseline scores than control schools post-COVID ($d=0.063$) and contained higher proportions of pupils who had ever been eligible for FSM, and pupils for whom English was an additional language.

The comparison of imbalance at randomisation stage and at analysis stage (i.e., after attrition between post-COVID randomisation and collection of outcome measures had had its effects) is shown in Table 8.

Table 8
Comparing imbalance at randomisation and at analysis

	Randomisation	Analysis
<i>Baseline variable</i>	<i>Standardised difference</i>	<i>Standardised difference</i>
PiE Short/ Baseline Score	-0.063	-0.046
SG Baseline Score	0.092	0.120
Female	-0.040	-0.020
Ever FSM	-0.163	-0.248
English as an Additional Language	-0.101	-0.101
Pre-COVID PiE Baseline (School- level)	0.054	-0.151
Pre-COVID SG Baseline (School- level)	0.124	0.103

At the point of analysis, the balance between control and intervention groups followed fairly similar patterns to the balance at the point of randomisation. A sizeable imbalance in the pre-COVID PiE baseline scores emerged in favour of the intervention group as a result of this attrition. Conversely, the balance for the PiE baseline score and the pre-COVID SG baseline scores improved, while the imbalance towards the treatment group in the proportion of pupils who had ever been eligible for FSM increased. Our pre-registered analytic approach anticipated

the potential for this and, consequently, sought to adjust for such baseline differences.

The results of the effects of the intervention on pupils' sentence generation and on their writing of text can be seen in Table 9.

Table 9
Impact means scores and effect sizes of intervention measures.

Unadjusted means	Full sample	Control group		Intervention group		Total n (intervention; control)	Effect size	
		Mean	n (missing)	Mean	n (missing)		Cohen's d (95% CI)	p-value
PiE Score	1402 (334)	9.78	713 (178)	9.36	689 (156)	1246 (637; 609)	0.04 (-0.19; 0.27)	0.74
SG Score	1443 (293)	16.96	702 (189)	17.23	741 (104)	1273 (674;599)	0.14 (-0.12; 0.39)	0.25

Table 9 shows the unadjusted means for the primary outcome are 9.78 for the control group and 9.36 for the intervention (i.e., slightly higher in the control group). However, after adjusting for covariates using the pre-specified analysis model (which, among other things, adjusts for the fact that the proportion of FSM pupils is higher in the treatment group), we calculate a Cohen's effect size of 0.04. This was not found to be a statistically significant difference between the two groups ($p=0.74$).

The results of the secondary analysis are also presented in Table 9. The unadjusted mean for the SG score was 16.96 in the control group and 17.23 in the intervention group (i.e., slightly higher in the intervention group). After estimating our pre-specified analysis model including the baseline covariates (which, among other things, adjusts for the fact that the SG baseline score is higher in the control group), the Cohen's d effect size is 0.14 in favour of the treatment group, although this effect size is also not statistically significant ($p=0.25$).

Sub-group analyses

We additionally considered whether there is evidence of differential effects among three different sub-groups: pupils eligible for FSM, pupils with EAL, and pupils in Batch 3 schools (those randomised post-COVID). This last sub-group was studied as being least affected by COVID disruption and, hence, we were checking our results were not induced in some way by effects of the disruption.

Table 10 reports the number of pupils in each sub-group and the effect sizes of the intervention among the sub-group, as well as the interaction effect size for the sub-group (i.e. the difference between the effect for the sub-group and the effect in the rest of the sample). For the primary outcome, the estimate on the interaction for

FSM pupils is very small ($d = -0.01$) with a large p-value of 0.76, implying minimal difference between effects for FSM and non-FSM pupils. However, for EAL pupils there is a larger estimated interaction effect of $d = -0.18$ with a smaller (though still insignificant) p-value of 0.41.

The secondary outcome follows a similar pattern with a small statistically insignificant interaction estimate for FSM pupils ($d = 0.08$), implying little difference in effects between FSM and non-FSM pupils, but a larger negative interaction effect for EAL students (i.e., difference in effects of EAL and non-EAL pupils; $d = -0.22$) with a p-value of 0.12. This provides indicative evidence that the intervention is ineffective for EAL students, but importantly does not show that it makes them any worse off (implied EAL sub-group $d = 0.02$). However, this finding also suggests a particularly encouraging impact of the intervention on the sentence generation score among non-EAL students ($d = 0.24$).

To understand the impact of the sentence generation measure in a more granular manner we explored the effect of being in the treatment group on each of the three criteria that attracted one mark in the sentence generation test (conditional on the same set of baseline covariates as for the primary and secondary analyses). The results of these analyses were:

- The count of sentences with both words used is higher in the treatment group by 0.63 (effect size = 0.15; p-value = 0.21)
- The count of grammatically correct sentences used is higher in the treatment group by 0.45 (effect size = 0.12; p-value 0.29)
- The count of semantically meaningful sentences is higher in the treatment group by 0.51 (effect size = 0.12; p-value 0.31)

As these results were in relation to an overall sentence generation score effect size of 0.14 (p-value 0.25) we summarise these results as suggesting that the overall effect on the sentence generation measure – such as it is – is underpinned by fairly even increases across these three elements of the overall score. This means that there appears to be a general effect on sentence generation rather than a more specific effect related to grammatical accuracy alone.

The outcome of an analysis of Batch 3 data suggested that losing schools from the project due to COVID-19 disruption, ahead of the project restart, was not driving our findings.⁴

Table 10
Effect sizes for sub-group analysis

Model	Cohen's d of sub-group	Cohen's d of interaction	Sub-group n	p-value of interaction	p-value of sub-group coefficient
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⁴ We also carried out robustness checks on Batch 1 and 2 schools using their pre-COVID baseline measures as covariates instead of those collected at point of project restart. Again, this did not make any difference to our findings suggesting that this initial school loss is not driving our main findings.

PIW FSM sub-group analysis	0.03	-0.01	259	0.76	-
SG FSM sub-group analysis	0.22	0.08	274	0.33	-
PIW EAL sub-group analysis	-0.06	-0.18	518	0.41	-
SG EAL sub-group analysis	0.02	-0.22	539	0.12	-
PIW Batch 3 sub-group analysis	0.13	-	468	-	0.46
SG Batch 3 sub-group analysis	0.15	-	509	-	0.40

Non-compliance with the amount of time of the lessons in the intervention was not found to explain the lack of impact on the primary outcome. The estimated effect size for those who complied fully with intervention delivery as defined is 0.05 (similar to the overall effect size of 0.04). This effect is not statistically significant ($p=0.67$). The estimated effect on the primary outcome of having done one additional standard deviation's worth of lessons was 0.02 and not statistically significant ($p=0.67$). Accounting for the extent of implementation thus did not change the overall impact evaluation results.

Findings – Qualitative Implementation and Process Evaluation (IPE)

The following findings emerged as a result of the qualitative data analyses. The data from the surveys of teachers, the interviews with teachers, and the observations of lessons were triangulated, and examples selected, for each of the five themes that relate to the overall project and IPE research questions.

Teachers' Experience and Knowledge

The pre-intervention baseline survey was completed by 47 of 70 teachers. Tables 11 and 12 show background information about the respondent's experience of primary school teaching.

Table 11.

Teachers' experience of teaching different year groups (post-NQT year) in present school and other schools.

0-2 years FTE	3-5 years FTE	6-10 years FTE	More than 10 years FTE
6	16	13	11

Table 12.

Number of full-time equivalent (FTE) years of primary school teaching experience in different primary school year groups.

Y1	Y2	Y3	Y4	Y5	Y6
22	45	14	14	15	6

30 survey respondents had had professional development about grammar teaching for more than four hours during their career, and 17 respondents had had more than seven hours professional development. 16 respondents had had three hours or less. The most common type of professional development was in-school staff meetings/in-service training. When asked about professional development about writing 43 respondents had had more than four hours of training, and 31 more than 12 hours. The only teachers from our sample of schools who had prior knowledge about Englicious were those who had been in schools involved in the study pre-COVID-19 lockdown (care was taken to preserve randomisation as part of the two batches of selections of schools).

In addition to professional development, and talking to colleagues, the sources of information to inform teaching of grammar and writing included these in rank order of frequency mentioned: Google search or other online sources such as BBC Bitesize or YouTube, and government guidance e.g. national curriculum documentation. Commercially published resources included TES Primary Resources; Rainbow Grammar; Talk for Writing (see Dockrell, Marshall, & Wyse, 2015); and Collins Dictionary online site.

44 baseline survey respondents agreed or strongly agreed that they were effective teachers of writing. When interviewed about their beliefs, during the first IPE visits to schools, there was evidence from the majority of the 12 teachers that they were confident to teach grammar in Y2, with a minority of teachers noting less confidence to teach Y5 or Y6.

Teaching Writing

The pre-intervention baseline survey included a question about how the teachers taught writing. Table 13 shows the responses related to approaches to supporting the composition of writing.

Table 13.

Answers to Question 11 of the pre-intervention baseline survey

Q11. Which of the following approaches do you use, if any, to support composition of writing with your current class? (tick one box for each of the approaches listed)					
	never	hourly	daily	weekly	monthly
Set activities that require pupils to vary the formality of written language (e.g. letters to friends v. report writing)	2	0	8	24	13
Teach pupils to make choices in relation to topics and ideas for their writing	3	0	17	20	7
Draw pupils' attention to differences in meaning between specific grammatical structures	7	1	9	23	7
Teach pupils to analyse the forms of texts they read as a stimulus for their writing	4	0	16	20	7
Encourage pupils to choose topic, form, and audience for writing, and decisions on when the writing is finished	13	1	7	18	8

With regards to grammar teaching and writing it is clear from Table 13 that teachers reported talking to their pupils about grammar. This would include the technical terms specified in the national curriculum. It is also clear that giving pupils choice over the topics, form and audience for writing was not common compared to other aspects of teaching writing composition.

One key difference between intervention and control schools, found as a result of the lesson observations, was that the Englicious lessons consistently included an opportunity for pupils to apply their learning through an independent writing activity that was part of the Englicious lesson. It appeared that this was not a typical approach in every lesson observed in the control schools. In the control schools a wide range of teaching strategies was seen being used to support learning about grammar, for example general approaches to grammar teaching that included using a text to contextualise teaching of grammatical terms and their properties; teacher-led strategies including deliberate inclusion of errors when presenting texts; whole-class activities including discussions while pupils were sitting on the carpet; and use of mini whiteboards for pupils to write sentences, and other examples which also allowed for the teachers to formatively assess pupils.

The teaching in the control school lessons included the use of whole class discussions which sometimes involved all pupils sitting together on a carpet area in

the classroom. For example, teachers 006, 029, 003, and 034⁵ did this. Encouraging pupils to talk to their partner during whole class discussions was also observed (060, 003, 034, 029, 022) as was group work (006, 022). To varying degrees the control school lessons we saw included some physical interaction involving grammatical structures, for example through playing and experimenting with language. This physical interaction was not seen as frequently, nor as consistently, as it was in the intervention lessons for which manipulation of words, phrases and sentences was a key feature of the intervention.

Other activities seen in control group lessons included pupils writing words or sentences on a mini whiteboard (003, 034, 022); displays of a child's piece of work being used as an exemplar with the class (034, 006); use of a flipchart; intentionally including spelling and punctuation errors in the teacher's writing (034, 029); and use of worksheets including writing frames (022). It is likely that these kinds of activities were also used outside of the Englicious intervention lessons by the teachers in the intervention schools.

Although we frequently saw pupils who appeared to be engaged with the lessons in the control schools, these lessons did not appear to afford pupils as many opportunities to physically play with language in the ways described for the Englicious intervention lessons. For example, although we saw four schools using the interactive whiteboard (IWB) this was mainly used as a display tool rather than used in an interactive way with pupils. We saw 006, 003, 022, and 034 use the IWB to show discussion questions, example words or sentences, definitions, and exemplars. However, 006 did use the IWB in an interactive way for the following activities: a verb matching task (matching past tense verbs with their present tense equivalents) and a verb identification task (from three options, choose the past tense verb for the sentence shown which matches the accompanying image and chose different pupils to come up and take a turn). 003 also used a similar verb matching activity with her class using the IWB but in that lesson we saw the teacher doing the 'drag-and-drop' actions on the IWB according to the pupils' answers.

Fidelity to Englicious

At the Englicious intervention training, and in the FAQ section of the manualisation handbook, teachers were informed that each intervention lesson had been planned to take approximately one hour. We knew that schools arrange their timetable in different ways and therefore acknowledged that some teachers may not have been able to accommodate an exact 60-minute lesson. Our guidance was this: "as far as possible, (to best ensure there is time to cover the different aspects of each lesson), we would ask for lessons to be in the region of one hour (give or take)" (Aarts & Cushing, 2021). The research team observed 11 intervention lessons (six during school Visit 1 and five during Visit 2). The shortest lesson lasted 54 minutes and the longest lesson was 75 minutes. The quantitative lesson duration measure of fidelity to Englicious was a lesson of between 45 minutes and 75 minutes in order to be considered compliant (see also the quantitative impact findings for the compliance

⁵ In order to preserve pseudonymity the numbers denote data collected in relation to individual teachers.

analysis). All 11 observed lessons were deemed to show fidelity to Englicious in terms of lesson duration.

In the mid-intervention survey teachers were asked to select a response option from four choices provided, to indicate the extent to which they were implementing the Englicious intervention lessons as intended. Of the 17 responses to the question (out of 19 respondents to the survey as a whole) ten respondents selected "fully as intended, to the best of my knowledge", six respondents selected "mainly as intended", and just one indicated "quite a lot of changes from intended"; the remaining two teachers did not provide an answer to this question. In an open-ended comment box five survey respondents (not including those participating in the process evaluation visits) told us about the following changes, some of which were for reasons beyond their control. For two teachers, adjustments had been made to either the frequency or the duration of lessons. These changes had stemmed from COVID-related issues i.e. the class needing to self-isolate, or timetabling changes resulting in staggered playtimes. Issues and changes made by the other three teachers included: an inability to use all of the interactive activities due to technical issues; the inclusion of additional visuals not part of the lesson resources; the use of mini whiteboards to enable more pupils to actively participate.

For each lesson observation the visiting researcher recorded details of any possible deviations from the Englicious manual of lesson plans: in total 32 instances were noted. This list was reviewed by the Englicious intervention developer and by the Principal Investigator who both were of the view that 28 of 32 cases should not be classed as deviations because they were broadly in-line with the parameters of the intervention's requirements. Of the remaining four examples of deviations, three related to sizeable timing variations for one or more activities in a particular lesson. The most concerning was significantly more or less time being spent on the final independent writing activity, e.g. 10-minutes instead of 20-minutes (010), or 30-minutes rather than 20-minutes (014, 064). In the fourth deviation the teacher had introduced a range of additional scaffolds for writing that together were seen as a considerable deviation from the intended pedagogical approaches for that lesson.

At the second visit we asked all five teachers about any changes they had made to the Englicious intervention lessons, acknowledging that "practice on the ground in real-life classrooms can be different" (there were difficulties with obtaining a response about a visit to the sixth school and shortly before the end of the intervention period the teacher informed us a visit would not be possible because of internal assessment activities happening at that time). 010 felt she had not done anything differently. 065 and 014 told us they had switched to a different activity sooner than specified if they felt the pupils were losing focus in the lesson. 014 and 036 had introduced opportunities for pair work so that pupils could share their ideas or try applying their learning orally before doing so in writing at the end of the lesson. 065 had chosen not to cover all of the examples for an interactive activity on 'adverbs'. For the lesson on 'past tense', 036 had asked her class to write examples of past tense verbs in their books when this wasn't a requirement in the lesson plan. 064, 014, and 036 had further scaffolded the pupils' learning: through modelling writing; by providing more examples; by offering visual prompts not included in the Englicious intervention resources; or by addressing and discussing misconceptions.

At the Englicious intervention training, teachers were told that the lessons had been designed to include a small margin of flexibility to account for teachers' professional judgements, e.g. identifying when pupils might need explanations for vocabulary items or including checks on learning, but in the main they should do their best to stay as close as possible to the lesson plans. On this basis, the changes to lessons noted in this section nearly all sit comfortably within that margin of flexibility. And, in spite of the four noted deviations above, overall it was concluded by the research team members involved in the IPE that the teachers had shown unusually high levels of fidelity to the intervention compared to many RCT interventions in literacy.

Perceptions of the Effectiveness of Englicious

Survey data collected at the mid-point during the intervention period, from 19 teachers in the intervention group (out of a total of 33 teachers), indicated that the majority of respondents agreed that the lessons were having a moderate positive effect on the way that pupils were writing (see Table 14).

Table 14.

Frequency of answers to mid-intervention survey question seven

Q7. So far, to what extent do you think this grammar intervention is having a positive impact on your children's writing? (tick and comment)			
Strong positive impact on children's writing	Moderate positive impact on children's writing	Weak positive impact on children's writing	No positive impact OR negative impact on children's writing
2	13	2	0

The end-of-intervention survey also showed that the majority of respondents (11 out of a total of 33 teachers) agreed that the intervention lessons had had a positive effect on pupils' writing (see Table 15).

Table 15.

Frequency of answers to end-of-intervention survey question 4c.

Q4c. In my view, the Englicious lessons have had a positive effect on the way that children in my class write and communicate meanings that they intend.			
Strongly agree	Agree	Disagree	Strongly disagree
3	7	1	0

At both school visits teachers were asked their views on the impact of the Englicious intervention on their pupils' learning. During Visit 1 all six intervention school teachers voiced a common perception that the lessons were improving their pupils' awareness about grammar and also their ability to remember and understand the grammatical knowledge being taught. For example, three teachers said pupils appeared to be remembering grammatical terms. 010 said pupils had remembered the term 'plural', and a child saying 'I see a past tense verb' was mentioned by 065. 065 also felt the lessons were helping pupils to become more conscious writers as a result of an increased awareness of the types of words they were using in their

sentences. 064 felt there might be some noticeable improvements in pupils' writing as a result of an increased awareness and understanding of some grammar features. As an example she suggested that if she asked the pupils to include an adjective in their writing their response would be: "oh right, yeah, I know what this is now, I'll put it in" (064-Visit 2, post-observation interview). Towards the end of the intervention period 036, 010, 014, and 064 said they felt their pupils understood what was meant when the teacher used grammatical terms. In addition, 036, 010, and 014 spoke about pupils' ability to use terminology appropriately, with confidence, to identify examples of grammatical constructions, and sometimes to offer their own examples and definitions. 014 offered the following reflection:

I think often grammar's just kind of, oh, you can tell me an adjective so you must know what it means, but you need to be able to identify in a sentence, and they can now do this in those lessons, but also other lessons, I'll be like talking about something else and I'll say, 'What is the noun in that?'...they can point it out and they can tell you why, which is really important I think for their understanding later down the line... (014-Visit 1, post-observation interview)

Despite holding similar positive views about the impact of the intervention when we spoke to this teacher again during visit 2, she noted uncertainties about whether the pupils would be able to apply these grammar concepts in their independent writing and commented that they "kind of freeze up" when invited to do so.

Three of the five teachers referred to the impact of the lessons on their pupils' current learning and surmised the potential for future learning when we visited for a second time, during one of the final weeks in the intervention period. For example 014 spoke about progress seen with her 'lower ability' learners. During the Englicious lessons these pupils had been trying to include grammar features in their writing; could identify examples of the grammar concept being taught in the lesson; and could discuss what was happening in examples shown on the interactive whiteboard. These were all things the teacher felt they would not have been capable of doing prior to the intervention.

010 felt that impact on the pupils' learning might be evident in the weeks that followed, as they would be attempting diary writing (in the prior term they had been working on non-fiction writing). This teacher was keen to see whether there were indications of the pupils "really playing around with language ... [for example] dropping in the adverb as a writer's choice". The teacher added: "...I'm curious as well, just to see, 'cause they talk about it [grammar] and...[are] able to identify it, but are they really thinking about their choice of language when they write? That's what I want to see." (010-Visit 2, post-observation interview)

A range of positive comments about the intervention activities were reported by five of the six teachers during the first school visits. Teachers liked the interactive nature of the lessons and that these led to useful discussions; they liked that the lessons included variety; that the tasks were age-appropriate and manageable for learners; and that the pupils enjoyed the games and activities. One teacher liked that there were opportunities in every lesson for the pupils to try and apply what they had learnt (033) while another felt she had seen good writing outcomes from some of the tasks (065).

However, some concerns were also highlighted about aspects of the intervention. 036, 064, 010, and 065 noted that some of the teaching slides were rather 'wordy' and this tended to result in pupils' disengagement. Two teachers were concerned about the amount of content to be covered in the lessons, and that the pace required meant it wasn't possible to spend more time on explanations where they felt this would be beneficial (064, 014). The amount of time pupils spent on the carpet was an issue for three teachers (014, 010, 033), and one teacher indicated she would like the lessons to include more opportunities for the pupils to engage interactively or to physically move around, as these would help to create "those memorable elements' in the pupils' minds – to help them remember the lesson as well as the concept taught and to be able to draw associations between the two." (033).

Seven of 19 comments in the mid-intervention survey data indicated similar concerns about some of the lesson content or the teaching slides not being 'child-friendly' or appropriate for the developmental level of the pupils. Six of 19 comments suggested that the structure or format of the lessons could be improved.

When interviewed for the final visits, four of the five teachers (014, 064, 010, 065) identified some aspects of the intervention that they had found challenging. The main concern was the quantity of learning expected in each lesson, which they felt was too much for pupils to take in during one session (014, 064, 065). Two teachers (014, 064) felt that the teacher input section at the beginning of lessons was too long, which created challenges for the pupils' ability to focus. One teacher felt the teacher-led explanations should be shortened and would prefer the lessons to include more opportunities for the pupils to interact, e.g. through more discussions, practical activities and games. This teacher, and one other, also thought it could be useful to have writing opportunities earlier in the lesson which could be compared to writing done at the end as this might offer insights into whether pupils seemed to have understood the lesson.

Three out of 11 comments in the end-of-intervention survey were made about the lessons or the slides containing too much content. Three comments noted that the resources were not engaging or child-friendly and two comments referred to the content not always being appropriate for the developmental level of the pupils. In response to a separate question asking teachers about any adaptations they had made to the lessons, nine teachers commented as follows: two comments indicated adjustments had been made for SEN/'lower ability' learners; two comments noted use of more visuals; two comments indicated use of formative assessment to allow teachers to gauge the pupils' understanding; two comments stated there had been no changes; and one comment noted changes made to some of the starter activities to provide variation.

In terms of the perceived effectiveness of Englicious for teachers, there was a positive reaction to the structure and content of the intervention lesson, which teachers spoke about when interviewed at the final school visits. Teachers found these elements helpful because the requirements were clear and therefore easy to follow. These views were echoed by seven of 11 respondents to the end-of-intervention survey. Survey respondent 010, who was a teacher at one of the IPE schools, made the following comment:

“The lesson slides and guides have been crucial in the delivery of the intervention as a teacher. The interaction of being able to use the whiteboard encourages all children to want to take part and is inclusive, giving an opportunity for children to apply their skills and understanding of grammar in front of the class. I also like the tasks that children complete at the end, especially the cartoon image where there is a lot for children to infer and be creative with” [010-end-of-intervention survey response]

Teaching the National Curriculum Grammar Requirements

The majority of respondents to the mid-intervention and end-of-intervention surveys said that knowing grammatical technical terms is essential, and that the national curriculum requirements for grammatical terms were positive (Tables 16 and 17). In both surveys the majority of respondents noted that their views about technical terms and the national curriculum had been influenced by their involvement with the Englicious intervention.

Table 16.
Answers to three questions from the mid-intervention survey

Q5a Knowing technical terms for grammar (such as noun, phrase or clause) is essential for learning to write.			
Strongly agree	Agree	Disagree	Strongly disagree
3	10	4	0
Q5b The national curriculum’s requirements for teaching grammatical terms in Y2 are a positive feature that helps teachers to improve children’s writing.			
Strongly agree	Agree	Disagree	Strongly disagree
2	13	2	0
Q5d To what extent have your views been influenced by your involvement in the Englicious intervention?			
Significantly influenced	Somewhat influenced	Not influenced much	Not influenced at all
2	9	5	0

Table 17.
Answers to three questions from the end-of-intervention survey

Q4a Knowing technical terms for grammar (such as noun, phrase or clause) is essential for learning to write.			
Strongly agree	Agree	Disagree	Strongly disagree
4	5	2	0
Q4b The national curriculum’s requirements for teaching grammatical terms in Y2 are a positive feature that helps teachers to improve children’s writing.			

Strongly agree	Agree	Disagree	Strongly disagree
2	7	2	0
Q4d To what extent have your views been influenced by your involvement in the Englicious intervention?			
Significantly influenced	Somewhat influenced	Not influenced much	Not influenced at all
3	5	2	0

Teachers also expressed concerns about the national curriculum's grammar requirements during the first visits to all 12 schools, the only time the explicit question about views of the national curriculum was asked. 060, 010, 033, and 003 described the requirements in similar ways, e.g. using phrases such as 'too much' and 'a lot'. A fifth teacher felt the specification pushed pupils too early in the year and was 'very idealistic' (014).

All teachers, in intervention and control schools, were asked to describe their usual approach to grammar teaching. When speaking to the teachers in the intervention group this question referred to their practices prior to participating in this project. Five out of 12 teachers spoke about using a formal approach to grammar teaching (033, 060, 006, 034, 065, 022). One teacher (003) spoke about their Year 2 class learning about grammar during short daily SpaG (Spelling, Punctuation and Grammar) starters that ranged in duration between 5-15 minutes. These sessions were taught on Mondays to Thursdays and then a longer writing session on Fridays. Three other teachers also used SpaG starters (036, 029, 034). 014, 010, and 022 told us they had previously taught grammar explicitly in Year 2 but this approach was abandoned when the Year 2 SATs assessment became optional.

Four teachers told us grammar was always taught in relation to a text, e.g. a book being read by the class or one that forms the focus of their topic work (060, 006, 065, 022). One of these teachers remarked that her pupils tend to respond better when the grammar teaching is contextualised in a text. Four other teachers also spoke about linking their grammar teaching to a text (036, 014, 064, 010) and doing this in a contextualised way, i.e. without any formal instruction on grammar. We have summarised this as a text-led approach, i.e. the book or genre is chosen first and the relevant grammar focus is identified afterwards. For example, the Year 2 topic in 014's class that term was 'All Creatures Great and Small' and they were looking at 'The Freedom Bird' and so all of the grammar teaching linked to this book. One teacher (034) said that sometimes she taught grammar in an integrated way and that her particular approach depended on the writing unit of work being covered.

Overall, the IPE found that a large majority of teachers involved in the intervention and control groups were experienced teachers (see Table 7) hence their views were based on their experience of teaching grammar and writing over many years. However, teacher professional development for teaching writing and grammar during their careers had been for a relatively small amount of time, and was mainly in-school professional development. Fidelity to the Englicious intervention was high. The teachers' views about grammar in England's national curriculum were varied. There was evidence of considerable support for the national curriculum requirements for grammar although teachers in the intervention had developed more positive

views as a result of being part of the intervention. A range of criticisms of the national curriculum requirements were also voiced.

Discussion

In this research project a new grammar and writing teaching intervention called Englicious was introduced to teachers of Year 2 pupils (aged 6 to 7) in one full working day of professional development. Delivery of the intervention was supported by a manual that detailed the 10 one-hour weekly grammar and writing lessons that were the intervention, and which were intended to support delivery of some of the grammar requirements in England's national curriculum. The research is believed to be the first worldwide to use an RCT and IPE design to research the grammar and writing of such young pupils.

In relation to the primary outcome measure for impact of the intervention, represented by the Progress in English writing test which required pupils to do a piece of writing based on a prompt, the positive effect size for this narrative writing was negligible, and not statistically significant. The lack of effect on narrative writing is the main outcome of our research, and is consistent with previously published studies on grammar and writing at primary education level.

For the secondary outcome impact test measure, the sentence generation test which required pupils to generate sentences from two-word prompts, the Englicious intervention showed a small positive impact with an effect size of 0.14, although this was not statistically significant. In general terms, an effect size of this magnitude is regarded by some as equivalent to about two months additional progress (Higgins, Kokotsaki and Coe, 2012), in this case progress in the ability to generate a sufficient number of single sentences that attracted higher marks overall when comparing pre-intervention with post-intervention. The sub-group analyses showed that pupils who did not have English as an Additional Language benefited the most, with an effect size of 0.24 equivalent to three months, or one term, of additional progress, although this also was not statistically significant. The effect size in relation to sentence generation was encouraging.

The process and implementation evaluation (IPE) which was designed to provide further explanations about the nature of the impact of the intervention showed that the Englicious intervention was perceived to be a successful way to teach the grammar requirements of England's national curriculum. Nearly all the case study teachers thought that Englicious was a good approach to teaching grammar which many of these teachers thought had helped them improve their practice. One of the things that teachers liked was that the approach made the teaching of grammatical terms more appealing for their pupils, for example through the use of pictures to support examples of grammar, and the opportunity to manipulate words and sentences on interactive whiteboards. The teachers' views about the national curriculum requirements for grammar were varied.

Although we view the results of the research as encouraging for the intervention it is important to acknowledge limitations in the research and its design which should limit our confidence. The lack of statistical significance means that we cannot exclude the

possibility that the effects might have been due to chance. The effect size of 0.04 for the primary outcome has a 95% confidence interval, from -0.19 to 0.27, meaning that we cannot exclude the possibility that the intervention had a negative effect of about a fifth of a standard deviation or a positive effect of nearly a third of a standard deviation at this level of statistical significance. Similarly, the secondary outcome has an effect size of 0.14 which has a 95% confidence interval from -0.12 to 0.39, meaning that we cannot exclude a negative effect of about a tenth of a standard deviation or a positive effect of about two fifths of a standard deviation at this level of statistical significance. Although in spite of the effects of Covid-19 lockdowns we were able to work with 65 primary schools we also acknowledge that the attrition rate of schools in the study was relatively high in relation to our impact analyses. Attrition is regarded as a potential cause of bias in a RCT because it introduces selection bias between treatment and control groups in terms of factors that were not measured in the study. These factors could be an alternative explanation for the results. We know from our contacts with schools that the main reasons for attrition were as follows: three teachers said that COVID-19, e.g. isolation of their class, was the problem; for two schools they were unable to submit a batch of final test outcomes due to errors in their processes and/or the school closed for summer holidays. However, it is also important to remember that our quantitative analysis of the impact of attrition via observable factors did not substantially change the results of our study overall. Nevertheless, we regard the high level of attrition as a check on the confidence in our findings.

Other limitations of the research can be derived from the IPE data and analyses. In addition to the explicit grammar teaching, the inclusion of the requirement for pupils to do a piece of writing (i.e. practising writing) as part of the lesson, something which was not the case in the control schools, could have been the main reason for the positive effect. It is also possible that the manipulation of words and sentences (in some respects similar to the manipulation that is a characteristic of sentence-combining which previous research has shown to be effective) was a main reason rather than the explicit teaching of technical grammatical terms. Another limitation in the research design is that the teacher survey responses represent teachers' *perceptions* of their practice, and although the data from the case study teachers who were visited in schools include direct observations of teaching the sample was only 20% of the overall sample of schools in the project.

The context of England's national curriculum requirements meant that it was not feasible to have a control group that did not have any grammar teaching, a control that some would regard as a better comparison. However, an alternative perspective on the nature of teaching in the groups is that the encouraging effect for sentence generation is perhaps underlined because to show any greater pupil progress was more difficult when pupils in the control schools were also receiving some grammar teaching, of a different kind. The IPE analyses showed that pupils in the comparison group tended to have their grammar teaching separate from practise in writing, whereas the Englicious groups had grammar and writing practise in the same lesson.

Notwithstanding the lack of impact on narrative writing the impact on pupils' sentence generation, i.e., the effect sizes in relation to sentence generation, although not statistically significant, are an encouraging finding, and not one that has

been seen in previous research of grammar for writing approaches. If pupils can generate more text, e.g., more sentences, it is regarded as a desirable aspect of learning to write. Evidence from previous experimental trials, and from systematic reviews, has consistently found that the teaching of grammar, in a variety of ways, to support writing has failed to show positive impacts on primary pupils' writing. Previously only one approach related to grammar had shown significant positive impacts on pupils' writing – an approach called *sentence combining* (see Appendix 1).

Given that the grammatical content covered by the intervention is required by England's national curriculum then one practical outcome of our findings is that grammar teaching can be done in a way that is likely to be more beneficial than business-as-usual. We hypothesise that two factors could be particularly important: 1. the requirement for pupils to experience the manipulation of words, phrases and sentences; 2. the direct connections made between the grammar teaching and practising writing.

Overall, if we take the results of our study and combine these with previously published work on grammar teaching, and on writing teaching, we do not yet have sufficient robust evidence on how to enhance young pupils' composition of written texts through grammar teaching. Our results do not suggest that scale-up of the intervention, in the form used for our study, is warranted. However, our finding about the likely importance of connecting grammar teaching with the teaching of writing more generally does suggest directions for new interventions. These new interventions could for example combine the manipulation of words, phrases and sentences with other proven methods of improving writing. For example, the most recent meta-analyses of high quality research studies on writing suggest that, rather than emphasising grammar, the following practices could be selected as a priority for teaching writing in primary/elementary education: a) an increase in the amount of time that pupils have for writing; b) adoption of a process approach to writing; c) creation of a classroom environment that is appropriately supportive of pupils' attempts at learning to write better; d) development of pupils writing skills, strategies and knowledge, including ways of planning writing; e) use of assessment for learning techniques; f) use of computers as part of the process of writing; g) use of writing meaningfully across different subject areas (Graham, Harris & Chambers, 2016; Wyse, 2017; Wyse and Torgerson, 2017). New interventions also need to take account of pupils' competencies in writing relevant to their stages of development. Sentence-generation is one of these competencies.

Conclusions

The main purposes of the study reported in this report were, a) to evaluate a new approach to the teaching of grammar; and b) to reflect on the implications of our research for a key element of England's national curriculum. The research found that seven-year-old pupils' narrative writing was not improved as a result of grammar teaching. There was an encouraging impact on pupils' generation of sentences but this was not statistically significant.

As far as England's 2014 national curriculum is concerned grammar is an important element for at least three reasons: 1. young pupils have to learn how to write grammatically appropriate sentences in conventional English suitable for a range of purposes for writing; 2. learning about language and languages is fascinating for many people, and meta-linguistic knowledge is an important element of being a successful language user; 3. grammar has been given a much more prominent place in the national curriculum implemented since 2014 compared to previous versions of the national curriculum, and hence has required new teaching approaches. Although we found evidence that the grammar content of England's national curriculum can be taught in a more beneficial way the main outcomes of our research lead to questions about whether the type of grammar content, and the amount of grammar content, in the national curriculum is the most appropriate focus to help pupils learn to write.

Knowledge about language is not entirely synonymous with grammar as currently conceived in England's national curriculum. National curriculum policy makers made selections of curriculum content to be covered based on prioritisation of certain kinds of knowledge at the expense of other kinds of knowledge. The political processes that were part of developing England's national curriculum of 2014, as a whole, resulted in ideology playing a part in selection of content in some areas of the curriculum more than others, including grammar content, sometimes at the expense of an evidence-based approach (see government advisor Mary James' account for testimony about the place of evidence in the national curriculum: James, 2012).

As a result of the findings from our research, and the findings from previous research on grammar and writing, this report concludes that the lack of robust research evidence to underpin the grammar requirements in England's national curriculum is a concern. We argue that a review of the requirements for grammar in England's national curriculum is needed in order to evaluate the programmes of study in relation to robust research evidence on how primary pupils can be best taught to write.

Recommendations

- The grammar requirements in England's national curriculum should be reviewed, in particular to evaluate their appropriateness for contributing to the improvement of pupils' writing.
- Further research should explore the merits of the manipulation of words, phrases and sentences closely connected to other evidence-based practices for the teaching of writing within grammar and writing lessons.

References

- Aarts, B. (2011) *Oxford modern English grammar*. OUP.
- Aarts, B. (2019) Teaching English grammar: the Englicious approach. *Languages, Society & Policy: Dialogues*. Online: <https://bit.ly/2w21Zuc>.
- Aarts, B. & Cushing, I. (2021) *English grammar teaching in primary schools: assessing the efficacy of Englicious*. London, UK: University College London.
- Aarts, B., S. Mehl & Wallis, S. (2016) Language learning at your fingertips. In: K. Corrigan & A. Mearns (eds.) *Creating & digitizing language corpora*. Palgrave. 211-239.
- Aarts, B. & E. Smith-Dennis (2018) Using corpora for English language teaching and learning. In: McIntyre, D. & Price, H. (eds.) *Applying linguistics: language and the impact agenda*. Routledge.
- Aarts, B., I. Cushing and R. Hudson (2019) *How to teach grammar*. Oxford: Oxford University Press.
- Anders, J., Wyse, D., Aarts, S., Dockrell, J., Torgerson, C., Manyukhina, Y., Cushing, I., & Sing, S. (2019). [Evaluation protocol: Grammar and Writing research project](#). London, UK: University College London.
- Anders, J., Dockrell, J., Sing, S., Torgerson, C., & Wyse, D. (2021). [Statistical analysis plan: Grammar and Writing research project](#). London, UK: University College London.
- Andrews R, Torgerson C, Beverton S, Locke T, Low G, Robinson A, Zhu D (2004) The effect of grammar teaching (syntax) in English on 5 to 16 year olds' accuracy and quality in written composition. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education.
- Arfé B., & Pizzocaro, E. (2016). Sentence generation in children with and without problems of written expression. In J. Perera, M. Aparici, E. Rosado, & N. Salas (Eds.), *Written and Spoken Development across the Lifespan*. Springer.
- Arfé, B., Dockrell, J. E., & De Bernardi, B. (2016). The effect of language specific factors on early written composition: the role of spelling, oral language and text generation skills in a shallow orthography. *Reading and Writing*, 29(3), 501-527. doi:10.1007/s11145-015-9617-5
- Berninger, V.W., Nagy, W. & Beers, S. (2011) Child writers' construction and reconstruction of single sentences and construction of multi-sentence texts: contributions of syntax and transcription to translation. *Reading and Writing*, 24(151). DOI: 10.1007/s11145-010-9262-y
- Creswell, J. (2013) *Research design: qualitative, quantitative & mixed methods approaches*. 4th ed. SAGE.
- Department for Education (DfE). (2013). *The national curriculum in England: Framework document. September 2014*. Department for Education.
- Dockrell, J., Marshall, C. & Wyse, D. (2015) Talk for writing: evaluation report and executive summary. London: Education Endowment Foundation.
- EEF [Education Endowment Foundation] (2013) Recruitment and Retention Pack. EEF Guidance, Sept. 2013.
- The Government Office for Science. (2008). *Foresight Mental Capital and Wellbeing Project (2008). Final Project Report*. London: The Government Office for Science.
- Graham, S., & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, 99(3). 445-476. doi:10.1037/0022-0663.99.3.445

- Graham, S., Harris, K. & Chambers, A. (2016). Evidence-based practice & writing instruction: a review of reviews. In: MacArthur, C., Graham, S. & Fitzgerald, J. (eds.), *Handbook of Writing Research*. 2nd ed. Guilford Press.
- Graham, S., McKeown, D., Kiuahara, S. & Harris, K. (2012) A meta-analysis of writing instruction for students in the elementary grades. *Journal of Educational Psychology*, 104(4). 879-896. DOI: 10.1037/a0029185
- James, M. (2012). Background to Michael Gove's response to the Report of the Expert Panel for the National Curriculum Review in England. *BERA News*. Retrieved from <https://www.bera.ac.uk/bera-in-the-news/background-to-michael-goves-response-to-the-report-of-the-expert-panel-for-the-national-curriculum-review-in-england>
- Koster, M., Tribushinina, E., De Jong, P.F. & Van den Bergh, B. (2015) .Teaching children to write: a meta-analysis of writing intervention research. *Journal of Writing Research*, 7(2). 249-274.
- Myhill, D. A., Jones, S. M., Lines, H. & Watson, A. (2012). Re-thinking grammar: the impact of embedded grammar teaching on students' writing and students' metalinguistic understanding. *Research Papers in Education*, 27.2. 139-166.
- Rogers, L. & Graham, S. (2008) A meta-analysis of single subject design writing intervention research. *Journal of Educational Psychology*, 100(4), 879-906. DOI: 10.1037/0022-0663.100.4.879
- Torgerson D., Torgerson, C., Mitchell, N., Buckley, H., Ainsworth, H., Heaps, C., & Jefferson, L. (2014) *Grammar for writing: evaluation report and executive summary*. EEF report.
- Tracey, L., Boehnke, J., Elliott, L., Thorley, K., Bowyer-Crane, C., & Ellison, S. (2019). *Grammar for Writing: Evaluation report and executive summary*. Education Endowment Foundation.
- Troia, G. (2014). Evidence-based practices for writing instruction (Document No. IC-5). Retrieved from University of Florida, Collaboration for Effective Educator, Development, Accountability, and Reform Center website: <http://cedar.education.ufl.edu/tools/innovation-configuration/>
- Wallis, S., Ian Cushing and Bas Aarts (2019) Exploiting parsed corpora in grammar teaching. *Linguistic Issues in Language Technology (LiLT)* 18.5. 1-36. (Published online: <http://csli-lilt.stanford.edu/ojs/index.php/lilt/article/view/107/104>.)
- Wyse, D. (2001) Grammar. For writing?: A Critical Review of Empirical Evidence. *British Journal of Educational Studies*, Vol. 49 (4): 411-427.
- Wyse, D. (2006). Pupils' word choices and the teaching of grammar. *Cambridge Journal of Education*, 36(1), 31-47.
- Wyse, D. (2017). *How Writing Works: From the Invention of the Alphabet to the Rise of Social Media*. Cambridge: Cambridge University Press. (240)
- Wyse, D. & Torgerson, C. (2017). Experimental trials and 'what works?' in education: The case of grammar for writing. *British Educational Research Journal*, 43.6. 1019-1047.

Appendix 1: Key Systematic Reviews, Meta Analyses and Randomised Controlled Trials with a focus on grammar teaching for writing (Wyse & Torgerson, 2017).

Citation	UK only or Other Countries	Type of pupils	Sample. Age of pupils	Design	Duration of intervention	Intervention summary	Summary of main outcome and conclusion
Andrews et al. (2004a)	Other countries: worldwide	Multiple types of pupils.	Multiple samples. Varied	Systematic review	Multiple	Multiple intervention types e.g. generative grammar; exposure to story and standard English features; transformational grammar; traditional grammar; contextualised grammar.	Grammar teaching has virtually no impact on pupils' writing. Teaching of syntax in English should cease to be part of the curriculum.
Andrews et al. (2004b)	Other countries: worldwide	Multiple types of pupils.	Multiple types of pupils.	Meta-analysis	Multiple	Sentence-combining	The National Curriculum in England should be revised to take into account that the teaching of sentence combining is effective.

Graham et al (2012)	Other countries: worldwide	Multiple types of pupils.	Multiple samples. Varied	Meta-analysis	Multiple	Multiple intervention types "(e.g., comparisons were made to process writing, strategy instruction, and typical language arts instruction" p.887).	Teaching grammar does not improve pupils' writing. A focus on a range of evidence-based approaches to teaching writing is more beneficial than grammar teaching for writing.
Graham & Harris (2017)	Other countries: worldwide	Multiple types of pupils.	Multiple samples. Varied	Meta-analysis of meta-analyses	Multiple	Multiple intervention types "(e.g., comparisons were made to process writing, strategy instruction, and typical language arts instruction" p.887).	Apart from the sentence-combining approach grammar teaching does not have a positive effect on pupils' writing. There are a range of evidence-based approaches and strategies that can have a positive effect on pupils' writing.
Fogel and Ehri (2000)	Other countries: USA	Two North-eastern U.S. cities with sizeable populations of African-American residents.	89 African-American BEV-speaking 3rd- and 4th-grade elementary school students. Age 8-10. Twelve	RCT	Two sessions of about 60 minutes each	Intervention group 1 (Exposure E): Focus on correcting non-standard forms of English common to Black English Vernacular. Intervention group 2 (Exposure plus strategy instruction ES): same as group 1 plus strategy	The combination of exposure to correcting non-standard grammar, strategy instruction, and practice, at least at paragraph level, is beneficial for writing.

			intact 3rd- and 4th-grade elementary school classes.			instruction. Intervention group 3 (Exposure, strategy instruction plus practice ESP): same as group 2 plus practice.	
Saddler & Graham (2005)	Other countries: USA	Nine classrooms/three schools. More skilled writers vs less skilled writers.	44 pupils. 9-10. 4th Grade.	RCT	30 lessons	Sentence-combining	Sentence-combining with peer-assistance had a positive effect on pupils' writing.

Torgerson et al. 2014	UK	53 primary schools from four geographical regions across England.	Estimated = 2549-2649. Age 10-11. Year 6	RCT	15 lessons over four weeks	Contextualised grammar	Contextualised grammar was not effective in improving pupils' writing as a whole class intervention.
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Appendix 2 – The Marking Guide

The Grammar and Writing Research Project

Guidance for Test Marking

1. Sentence Generation Task

Instructions for teachers implementing the task with a class of children

Teacher: 'We are taking part in an interesting research project about grammar and writing. As part of this project we are going to do a task. When you do the task I will say two words, then you should write as many sentences as you can that include these two words. There are three rules for writing the sentences':

- 1) the first rule is that each sentence you write should include both of the words that I have said;
- 2) the second rule is that the two words cannot be changed in any way. So if the word is *biscuit*, you should say *biscuit*, not *biscuits* or *cookies*;
- 3) the third rule is that you should try and make sure all the sentences are different from each other. For example: if I say the words *milk and biscuits*, you could write: *I have milk and biscuits at teatime*, or *Biscuits are good with milk*, or *Andrew likes milk but not biscuits*.

'The first word pair is *dog cat*. You do not need to worry about the spellings, just do your best to write the sentences.

The second word pair is *water bridge*.'

Marking criteria

1. The sentence (this can be a complete or incomplete sentence, e.g. a phrase) must include both words said by the teacher used in exactly the way they were said.
Each sentence must be sufficiently different from a previous sentence. If the child repeats a sentence already generated, changing only the subject or verb (e.g. 'children go to school/children are at school/children play at school') they do not get marks for the repeated sentence.
2. Exclude spelling errors from the marking unless they are words that are indecipherable so the sentence cannot be scored for grammatical or semantic accuracy.
3. The maximum score for any sentence is three marks – a) both words; b) accurate; c) meaningful:
 - a. both words: inclusion of both words (unchanged) from the task prompt. Both words used in a complete or incomplete sentence, and the sentence is sufficiently different from any other sentences previously written by the child (one mark).

Zero marks in total if both words are not included in the child's writing as part of a complete or incomplete sentence, or one or both words have been changed, or if sentence is not sufficiently different from previous sentences. In these cases do not score for grammatical accuracy or semantic meaning.

b. accurate: grammatically accurate (one mark). Grammatical accuracy refers to the correct use of tenses, plurality, possessives, etc. A capital letter and full stop are not required.

An incomplete 'sentence', e.g. a phrase, can be marked as grammatically accurate.

If there are two sentences on one line separated by a full stop they should be marked as separate sentences.

c. meaningful: semantically meaningful sentence (one mark). The child must have written a complete sentence and this must make full sense on its own.

An incomplete 'sentence', e.g. a phrase, cannot be marked as semantically meaningful.

How to do the marking - Sentence Generation Task

1. For the piece of writing to be marked check if there is one page or two pages of sentences.
2. For the child's writing count the number of sentences in total generated from the word pair.
3. Copy and paste a comparable number of lines in the spreadsheet.
4. Enter the number of sentences for the word pair in the specified column in the spreadsheet.
5. Delete the numbers in the BWU/GA/SM cells. Check that the totals in the column have reset to zero, an indication that the sum formula has copied over.
6. Enter the correct School and Pupil ID – this is the code that can be found at the top of every sheet. The code should follow the same format each time: a letter followed by two-digits, a hyphen, and two-digits, e.g. A01-03; A54-23 etc. The letter can be entered as lower case.
7. If you deem a sentence to be unreadable, enter zero in the BWU column and add a brief note in the 'Notes – general' column.
8. Enter a mark in each of the three columns for each sentence:

Column BWU = Both words used, unchanged, and each sentence sufficiently different to all other sentences

Column GA = Grammatically accurate

Column SM = Semantically meaningful

9. Check that the total score cell has updated. If you have added lines check that the range of cells for the auto-sum includes marks for all sentences.
10. Repeat for all pieces of writing you have been asked to mark.

Example of agreed marks for a piece of writing

School-Pupil ID (repeat on every line)	Sentence	Word pair	BWU	GA	SM	Total marks
A02-04	1	water/bridge	1	0	1	2
A02-04	2	water/bridge	1	1	1	3
A02-04	3	water/bridge	1	0	1	2
A02-04	4	water/bridge	0			0

Recording 'blank sheets'

For any 'blank' sheets in your packs, please enter the appropriate code in the specified column in the spreadsheet:

- . if sheet does not state a reason
- .a if sheet states child was absent
- .d if sheet states child declined/did not want to participate
- .s if sheet states SEN
- .z if sheet states any other reason not listed above – in this case, if the information is available please also add a comment in the 'notes on blank sheets' column (.z ONLY)

2. Progress in English Test (PiE)

PiE Short Form Task

Instructions for teachers implementing the task with a class of children

- Please introduce the topic of 'growing things', e.g. by talking about things the children might have grown recently, either at home or at school. Talk about why we use instructions; you might show them some examples such as recipes or instructions for constructing toys.
- Please ask the children to write some instructions for planting and growing some seeds so that another child can follow them. Tell the children to spend a few minutes thinking about the following questions:
 - **What do you need?**
 - **What do you have to do?**
 - **In what order should things be done?**
- Explain to the pupils they can use the pictures on the sheet to help them write the instructions or they can add their own ideas.
- Please tell the children to work independently and to make a best guess at any spellings they are not sure about. Please remind them to use punctuation as they would in any other writing they do. Please ask them to write clearly and, if they make a mistake, they should just cross it out and carry on.

The marks and criteria to be applied to each example of a pupil's writing for the short form task are as follows:

Composition and Effect and Vocabulary (CEV)	Mark CEV	Text Organisation and Sentence Structure (TOSS)	Mark TOSS
Fewer than two basic recognisable instructions.	0	Fewer than two coherent phrases or fewer than two ungrammatical fragments.	0
Some basic recognisable instructions but not always focused – may drift into narrative or misunderstand prompt. Mainly simple repetitive speech-like vocabulary.	2	Some coherent phrases or sentences but some ungrammatical fragments.	1
Short series of relevant instructions; may be incomplete or unclear. Vocabulary appropriate to subject matter, with some variety.	4	Instructions mainly in an appropriate order; numbering may be used. Generally grammatically correct but simple repetitive sentence structures.	2
Series of relevant instructions; information is mostly complete and clear to the reader. Some use of precise vocabulary.	6	Points mainly in chronological order and connected by numbering or connectives such as <i>first, then</i> . Mainly correctly formed imperatives or advisory present tense statements. There may be some simple expansion (adverbs/adverbial phrases).	3
All the relevant instructions complete and clearly explained; developed through description, explanation or further information. Well-chosen and varied vocabulary for interest and precision/economy.	8	Clear chronological order consistently signalled by numbering or connectives. Consistent use of imperative or advisory forms. Sentences may be economical and precise or more complex, varied by expansion of noun and/or verb phrases and use of subordination.	4

How to do the marking - PiE Short Form Task

Enter the School and Pupil ID – this is the code that can be found at the top of every sheet. Read through the piece of writing. Choose the mark for Composition, Effect and Vocabulary (CEV) then the mark for Text Organisation and Sentence Structure (TOSS) by deciding which descriptor in each column best fits that piece of writing. The marks in the CEV column do not automatically correspond to the equivalent row in the TOSS column and therefore you should choose each mark separately. Check that the total figure has updated.

Repeat for all pieces of writing you have been asked to mark.

Example of agreed marks for a short form piece of writing

Short Form task	CEV	TOSS	Total
School & Pupil ID: A02-01	2	1	3

Recording 'blank sheets'

For any 'blank' sheets in your packs, please enter the appropriate code in the specified column in the spreadsheet:

- . if sheet does not state a reason
- .a if sheet states child was absent
- .d if sheet states child declined/did not want to participate
- .s if sheet states SEN
- .z if sheet states any other reason not listed above – in this case, if the information is available please also add a comment in the 'notes on blank sheets' column

PiE Long Form Task

Instructions for teachers implementing the task with a class of children

(We expect many teachers will have provided the children with a *Rainy Day* planning sheet to help them think about their ideas – this was optional; see Appendix C for a copy of this sheet.)

- Introduce the topic of rain.
- Discuss with the class what they do when it rains.
- Ask them if they have ever been caught in the rain and what they did to avoid getting wet.
- Explain that you would like the children to write about a family day out in the rain. Ask them to think about this. The children should not share their ideas with one another.
- To help guide their thinking, you could ask the following questions or something similar (as you do this, the children can write down any ideas on their *Rainy Day* planning sheet):

What were you doing when it started raining?

What did you do?

What happened next?

Did you enjoy yourself?

How did the day end?

- Tell the children they can use their imagination if they cannot remember the details (i.e. the information does not have to come from a real event).

Completing the task:

- Please tell the children to work independently and to make a best guess at any spellings they are not sure about. Please remind them to use punctuation as they would in any other writing they do. Please ask them to write clearly and, if they make a mistake, they should just cross it out and carry on.

The marks and criteria to be applied to each example of a pupil's writing for the long form task are in the table that follows:

Composition and Effect (CE)	Mark CE	Text Organisation (TO)	Mark TO
Unidentifiable event, or identifiable event but unconnected to prompt.	0	Fewer than two coherent events, possibly in non-chronological order.	0
Identifiable event(s), possibly connected.	2	Brief or uncontrolled sequence of broadly chronological events. <i>e.g. repeated use of 'and then...'</i>	1
Undeveloped, but relevant to prompt, with more than one event/element.	4	Chronological structure with some connectives or phrases indicating time sequence. <i>e.g. use of phrases such as 'in the morning', 'in the afternoon', 'at 3 o'clock'.</i>	2
Events relevant to the prompt with simple development of at least one.	6	Coherent chronological structure with beginning/middle/end. <i>e.g. 'First I woke up in the morning', 'by the afternoon', 'By the end of the day'...</i>	3
Relevant and generally coherent narrative. Some development through detail, dialogue, description or comment.	8	Clear overall structure with resolution/conclusion. Identifiable sections/paragraphs with some connections between them.	4
Sentence Structure (SS)	Mark SS	Vocabulary (V)	Mark V
Fewer than two coherent phrases or fewer than two ungrammatical fragments.	0	Unintelligible text.	0
Some coherent sentences but some ungrammatical fragments.	1	Mainly simple repetitive speech-like vocabulary	1
Generally grammatically correct but simple repetitive sentence structures, most starting with personal subject and action verb and sometimes joined by <i>and</i> , <i>then</i> , <i>so</i> .	2	Vocabulary appropriate to subject matter, with some variety.	2
Sentence structures show understanding of a variety of constructions but may lack consistency and control. Simple expansion of phrases.	3	Attempts to use ambitious vocabulary, perhaps not always successfully/appropriately.	3
Sentence structures varied by expansion of noun and/or verb phrases and use of subordination.	4	Well-chosen and varied words and phrases for interest and excitement/precision/economy.	4

How to do the marking - PiE Long Form Task

Enter the School and Pupil ID – this is the code that can be found at the top of every sheet. Read through the piece of writing.

Choose the mark for Composition and Effect (CE) then Text Organisation (TO) then Sentence Structure (SS) then Vocabulary (V) by deciding which descriptor in each column best fits that piece of writing. Check that the total figure has updated. Repeat for all pieces of writing you have been asked to mark.

Example of agreed marks for a long form piece of writing (see Appendix D)

Long Form Task	CE	TO	SS	V	Total
School & Pupil ID: B40-19	6	3	2	2	13

Recording 'blank sheets'

For any 'blank' sheets in your packs, please enter the appropriate code in the specified column in the spreadsheet:

- . if sheet does not state a reason
- .a if sheet states child was absent
- .d if sheet states child declined/did not want to participate
- .s if sheet states SEN
- .z if sheet states any other reason not listed above – in this case, if the information is available please also add a comment in the 'notes on blank sheets' column

APPENDIX A [of the marking guide] – Sentence Generation Task (SGT)

The examples below (reproduced exactly as written by the children) aim to provide you with additional guidance in terms of what is meant when referring to specific criteria and concepts in the scoring of this activity.

Zero marks for sentences:

[A02-03] Sentence 2: A brigde is built because some people dont like to swim
[A01-15] Sentence 2: I was thirsty on the bridge.

Decision: Both words not used.

Total marks: Each sentence scores zero marks (entered into the BWU column).

[A04-06] Sentence 4: Dogs and cats are pets.
[A13-02] Sentence 6: I go to the toilet with my cats and dogs.
[A02-03] Sentence 3. Some children are afraid of glass brigdes because it might fall and they will be drowend by water.

Decision: One or both words have been changed from the task prompt, something which does not meet the criterion for both words in the word pair used exactly as given.

Total marks: Each sentence scores zero marks (entered into the BWU column).

What do we mean by sentences being sufficiently different?

[A02-01] Sentence 1. The dog luvs the cat
[A02-01] Sentence 3. The cat hats [hates] the dog

Decision: These sentences would be classed as sufficiently different because the subject, verb and object have been changed in the second sentence.

Total marks: Sentences 1 & 3 score 3 marks each (both words used, unchanged; grammatically accurate; and make sense).

[A02-01] Sentence 1. The Bridge fel on to the water.
[A02-01] Sentence 3. The Bridge sinks on the water.

Decision: These sentences would be classed as NOT sufficiently different because the subject and object remain the same in each sentence and only the verb and preposition have been changed.

Total marks: Sentence 1 scores 3 marks (both words used, unchanged; grammatically accurate; and makes sense).
Sentence 3 scores zero marks (entered into the BWU column).

What do we mean by grammatically accurate?

The grammar should be standard English. The child's 'sentence' does not need to be a complete sentence to score one mark for grammatical accuracy, e.g. a phrase (however, it does need to be a complete sentence to score for semantic meaning).

[A02-05] Sentence 3. The water and the bridge always were there.

Decision: This sentence would be classed as grammatically accurate as it conforms to standard English. The word order may appear stylistically unconventional but it is standard English.

'bridge and were water the' is not standard English and is grammatically incorrect!

Total marks: Sentence 3 scores 3 marks (both words used, unchanged; grammatically accurate; and makes sense).

[B06-22] Sentence 2. the water on the bridge.

Decision: This is an incomplete sentence but it is grammatically accurate. It is not semantically meaningful because it is not a complete sentence.

Total marks: Sentence 2 scores 2 marks (both words used, unchanged; is grammatically accurate; is not semantically meaningful).

[B06-23] Sentence 3. the very silly cat and the silly dog did jump on top of the lokers.

Decision: This sentence would be classed as not grammatically accurate because of the incorrect verb tense. However, it is semantically meaningful.

Total marks: Sentence 3 scores 2 marks (both words used, unchanged; and makes sense).

How to treat a noun without a definite or indefinite article:

[A02-03] Sentence 1. Cat is afraid of dog and shivers as he walks in front of her.

[A02-03] Sentence 3. Dog is frends with cat because she is freindly

[A02-03] Sentence 5. Cat likes dog.

Decision: All three sentences would be classed as not grammatically accurate because they lack the use of a definite or indefinite article, i.e. the/a.

Total marks: The three sentences score 2 marks each (both words used, unchanged; each sentence makes sense).

What do we mean by semantically meaningful?

The child's idea must be expressed in a complete sentence; however, the idea does not need to be possible or true, e.g. it can be fanciful or poetic.

[B06-22] Sentence 1. the Bridge is laying under the water.

[B06-23] Sentence 1. the Bridge and the water are frends.

[A02-05] Sentence 4. The dog hit the cat in the house

[A02-05] Sentence 6. The water and the bridge are nice!

Decision: These four sentences would be classed as semantically meaningful because they make sense on their own. Sometimes, the ideas expressed may seem rather fanciful but these are acceptable.

Total marks: The four sentences score 3 marks each (both words used, unchanged; grammatically accurate; and semantically meaningful).

[B06-22] Sentence 2. the water on the bridge.

Decision: This sentence would not be marked as semantically meaningful because it is not a complete sentence.

Total marks: Sentence 2 scores 2 marks (both words used, unchanged; grammatically accurate; but is not semantically meaningful (because it is not a complete sentence)).

How to treat spelling errors:

Do not penalise for spelling errors. As per the task brief, the children were told not to worry about spellings.

[A02-01] Sentence 3: The cat hats the dog.

[A02-03] Sentence 5: We need a brigde when their is deep water.

[A02-05] Sentence 7: The dog and cat cewed there cewy toys.

How to treat punctuation errors:

Do not penalise for lack of or misused punctuation, e.g. no capital letters or full stops. If a child starts a sentence on the same line as a previous sentence, i.e. demarcated by a full stop, treat these as separate sentences.

The templates below show the two response sheets that children were given to complete the sentence generation task.

[Blank space due to position of templates below]

APPENDIX B [of the marking guide] – PiE Short Form Task

The five writing samples that follow have been provided as examples of what we think would merit the specified CEV and TOSS marks.

Short task	CEV	TOSS	Total
School & Pupil ID: B10-01	0	0	0
School & Pupil ID: B60-07	2	1	3
School & Pupil ID: B60-08	4	2	6
School & Pupil ID: A02-04	6	3	9
School & Pupil ID: B60-05	8	4	12

Sample 1

Short task	CEV	TOSS	Total
School & Pupil ID: B10-01	0	0	0


B10-01


①


Exercise 6

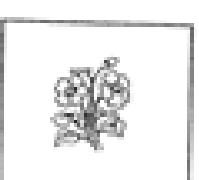
Planting Seeds

What you need *you need*









What you do

flower seed in the way

Sample 2

Short task	CEV	TOSS	Total
School & Pupil ID: B60-07	2	1	3

B60-07

What you need

Soil Seed Water



What you do

~~First~~ ~~Water~~ First dia
 a hole in the core
 First pot sun
 Seed in the
 * Pot and
 Water It in and
 It has sunlight.

Sample 3

Short task	CEV	TOSS	Total
School & Pupil ID: B60-08	4	2	6

560-08

Exercise 8

Planting Seeds

What you need: seed, water, soil, plant









What you do:

Place soil in a pot + seeds

then add water then you wait

with the plant! Then

you flower is ready for 5

minutes then you

see your flower

grows! Then you give

your plant energy!

Sample 4

Short task	CEV	TOSS	Total
School & Pupil ID: A02-04	6	3	9

A02-04

Exercise 6

Planting Seeds

What you need



What you do

First I got a flower pot and put some
brown soil into the flower pot. Next
put some flower seeds into the flower
pot. Then add water so go I use a
watering can. Leave the flower so it will grow
by the sun. Now I have flowers.





Sample 5

Short task	CEV	TOSS	Total
School & Pupil ID: B60-05	8	4	12

B60-05

Planting Seeds

What you need
Soil, Seed, water, ^{and} sunlight

What you do

1. First dig up some soil.
2. Next put ~~are~~ a seed inside.
3. Give water it in the next few weeks/month or years you'll have a tree/plant!
4. Water it every week, month, year and you have a tree.
5. Remember to wait 5 days before picking the fruits ~~from~~ ~~of~~ fruits.
6. Remember to wait before eating.
7. Last reproduce after eat.

APPENDIX C – PiE Long Form Task (Planning Sheet)

Rainy Day planning sheet

Rainy Day

Planning

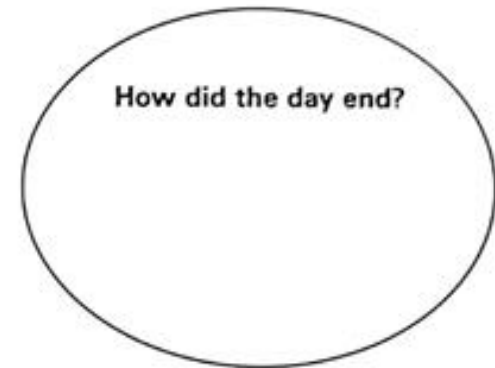
Make a note of some of your ideas.

18



What were you doing when it started raining?

What happened next?



APPENDIX D: PiE Long Form Task (Example with agreed marks)

The writing sample that follows has been provided as an example of what we think would merit the specified CE, TO, SS and V marks (see page 9):

Long Form Task	CE	TO	SS	V	Total
School & Pupil ID: B40-19	6	3	2	2	13

B40-19 (19)

Rainy day

First I woke up in the morning I was feeling very sad. ~~because happy~~ because I can jump up and down I was feeling sad because it was raining but I also felt happy! because I could jump up and down in puddles. Then I brushed my teeth and ~~brushed~~ washed my hair, got changed. Then I went down stairs and ~~set~~ set up my breakfast.

Then I went to the rain got water by the window. It was high water! I got scared because it was so close the windows on the roof! At lunch time it was a weird speed! I was worried my beautiful plants will drown. I said to my self how can I deal with this rain but then I came with a idea to play play a game game or watch tv. By the end of the day it was very speed and well it stop raining. She put a rainbow in the sky and it will stay there forever!

COVER PHOTO: Matt Clayto

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