

SUPPORTING LESS-PROFICIENT WRITERS THROUGH LINGUISTICALLY-AWARE TEACHING

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Abstract

Whilst historically there has been a widespread consensus that teaching grammar has no impact on students' attainment in writing, more recent research suggests that where a functionally-oriented approach to grammar is meaningfully embedded within the teaching of writing, significant improvements in writing can be secured. A recent study ((Myhill et al 2012), using a functionally-oriented approach, which found a statistically significant positive effect of such an approach, also found that the approach appeared to benefit higher-attaining writers more than lower-attaining writers. The study reported here set out to investigate specifically whether functionally-oriented approach to teaching grammar in the context of writing might support less proficient writers. A quasi-experimental design was adopted, repeating the principles of the parent study but with the intervention adapted to meet the identified writing needs of less proficient writers. The statistical analysis indicated a positive effect for the intervention group ($p < 0.05$), and an effect size of 0.33 on students' sentence structure and punctuation. The study demonstrates that explicit attention to grammar within the teaching of writing can support learners in developing their writing, but taken with the parent study, it also highlights that pedagogical choices need to be well-matched to writers' needs.

Keywords:

grammar teaching; functionally-oriented approach; less proficient writers; pedagogical choices; metalinguistic knowledge

Introduction

Despite a prevalent historical consensus that teaching grammar has no impact on students' attainment in writing (see for example, Braddock et al., 1963; Hillocks, 1984; Andrews et al., 2006; Myhill and Watson 2014), there is a growing body of interest in, and evidence that, a functionally-oriented approach to grammar, meaningfully embedded within the teaching of writing, can secure growth in writing (Christie and Unsworth, 2005; Larsen-Freeman, 2015; Klingelhofer and Schleppegrell, 2016). Such linguistically-aware approaches draw learners' attention to language as an artefact and foster their metalinguistic understanding of how to shape written text. A previous randomised controlled trial, conducted by the authors, had found that embedding a functionally-oriented attention to grammar within the context of writing had a significant positive effect on the attainment of writing in students in the intervention group (Myhill et al 2012; Jones et al 2013). One finding, however, was that statistical analysis showed that able writers made a stronger rate of improvement than less proficient writers, and the reason for this was not clear. One explanation may have been simply that the able writers' rate of improvement was sharper because the able writers in the comparison group flat-lined in terms of progress: in other words, they made little or no improvement over the year. An alternative explanation may have been that the grammar addressed in the teaching units addressed more effectively the writing needs of able writers rather than those of less proficient writers. The current study, reported here, set out to investigate the latter possibility by designing an intervention which directly addressed the identified writing needs of less proficient writers.

Theoretical Framework

Defining grammar

The term 'grammar' may be one of widespread familiarity but it is nonetheless a term which is multiply interpreted and multiply understood, and thus it is important to provide a brief account of these multiple understandings and to clarify what 'grammar' means in our own research. 'Grammar' is a polysemic word and many dictionaries acknowledge this by providing explanations of the different meanings it encompasses. For example, the Oxford Dictionary of English Grammar provides four definitions: 1) grammar as a language system; 2) popular views of grammar as structural rules of language; 3) the name of a book which contains grammatical explanations and 4) an individual's use of these rules (Chalker and Weiner, 1994, p.177). It also draws attention the fact that there are different grammars, including *traditional grammar*; *pedagogical grammar*; *reference grammar*, and *theoretical grammar*. Theoretical grammar itself divides into a range of different grammatical theories, such as generative grammar, transformational grammar, cognitive grammar and so on (Nordquist, 2017).

Even at the level of a basic definition of the word 'grammar' there is not a consensus. Some definitions of grammar adopt a macro perspective, conceiving of grammar as broadly 'the business of taking a language to pieces to see how it works' (Crystal, 2004a, p.10) or as 'a way of describing how a language works to make meaning' (Derewianka, 2011, p.1). A relationship between grammar and meaning is emphasised by both Crystal and Halliday: Crystal maintains that 'grammar is the study of how sentences mean– the structural foundation of our ability to express ourselves' (Crystal 2004b, p.9) whilst Halliday and Matthiessen argue that 'grammar is the central processing unit of language, the powerhouse where meanings are created' (Halliday and Matthiessen, 2014, p.22). For others, a definition of grammar is more concerned with what areas of study it embraces. Greenbaum and Nelson define grammar as the 'set of rules that allow us to combine words into larger units' (2002, p.1) and in similar vein, Huddleston and Pullum define it as 'the principles or rules governing the form and meaning of words, phrases, clauses and sentences' (2002, p.4). Both of these definitions suggest

that grammar is fundamentally concerned with syntax and with sentence-level study. However, Biber et al. note that there are differences in the way different linguists frame the 'domain of the term, grammar' with some confining themselves to 'syntactic constructions' whilst others 'include morphology and the interface between grammar and other levels of language such as phonology, the lexicon, and semantics' (Biber et al., 1999, p.6). The Oxford Dictionary of English Grammar takes a broad view of the grammar domain, defining it as 'the entire system of language, including its syntax, morphology, semantics and phonology' (Chalker and Weiner, 1994, p.177). What seems clear is there is consensus that grammar comprises the study of syntax; where there is difference relates principally to what other linguistic elements are included within the boundaries of grammar. Halliday and Mathiessen argue that grammar and vocabulary are on a continuum and thus coin the term 'lexicogrammar' to signal that syntax and morphology are 'both part of grammar' (2014, p.24). Relevant to our own research, they also argue for the necessity of considering lexico-grammar from a 'trinocular perspective', looking at the grammar 'from above', taking semantics into account, and 'from below' in the context of the phonology (2014, p.48). It is this conceptualisation of grammar which has informed our own research because of its embedded association of grammatical aspects (lexico-grammar) with meaning (semantics).

The role of metalinguistic knowledge in writing

A further conceptual problem with discussion of grammar is that the word is frequently used to address both explicit and tacit knowledge of grammar. As Crystal reflects, 'everyone who speaks English **knows** grammar, intuitively and unconsciously' (2004b, p.12): for example, from an early age we can produce grammatically correct sentences and recognise grammatically implausible sentences, but we cannot name the grammatical structures or explain the grammatical patterns which characterise these sentences. But 'not everyone who speaks English **knows about** grammar' where 'knowing about' means 'being able to talk about what we know' (Crystal, 2004b, p.12). Such 'knowing about' is metalinguistic knowledge. So, although all language users develop and use considerable implicit knowledge about language and grammar, metalinguistic knowledge refers to those moments or periods when language itself becomes the focus of attention, rather than the medium of communication. This may be a momentary switch when users 'shift their attention from the transmitted contents to the properties of language used to transmit them' (Cazden, 1976, p.3), such as, for example, when a young child notices that 'tickle' rhymes with 'pickle'. Or this may be a more sustained period of attention to language, such as the evaluation and revision of the argument structures in a written text. Theoretically, metalinguistic knowledge has been conceptualised with different emphases in linguistics and in psychology (see Myhill and Jones 2015). From a linguistic disciplinary lens, such metalinguistic attention is likely to draw heavily on grammatical metalanguage as the tool for analysis and to focus on text, whereas a cognitive psychological lens is more concerned with the thinking process of metalinguistic attention, and focuses on the thinker. Our own conceptualisation also draws on socio-cultural notions of writing as social practice, and frames metalinguistic knowledge as 'the explicit bringing into consciousness of an attention to language as an artifact, and the conscious monitoring and manipulation of language to create desired meanings grounded in socially shared understandings' (Myhill 2012:250).

On one level, every act of writing involves metalinguistic activity: writing is a deliberative act, and regardless of the age and expertise of the writer, is one that requires conscious engagement with shaping text. Likewise, metalinguistic knowledge for writing includes grammatical knowledge, knowledge about written genres and knowledge about the writing process. Our specific interest, however, in this article, is with grammatical metalinguistic knowledge, with 'appropriate and strategic

interventions by the teacher' which support 'the process of making implicit knowledge explicit' (Carter, 1990, p.117) and how that meta-knowledge can be channelled constructively into the process of text creation. Historically, grammatical knowledge in the curriculum was taught as a body of knowledge which would help language users avoid error, drawing on a conceptualisation of grammar as prescriptive, principally about understanding the rules of the language and 'linguistic etiquette' (Hartwell, 1986, p.110). In contrast, however, we have placed grammatical metalinguistic knowledge 'within a frame of reference which demonstrates its relevance to the active and creative tasks of language production and comprehension. Its study is not an end in itself, but a means of developing our awareness of the expressive richness of 'language in use' (Crystal, 2004, p.10).

In an educational context, developing learners' metalinguistic knowledge about writing is a mechanism for making visible the decision-making processes in the creation of written text. Our own research (Myhill et al 2012; Jones et al 2013) focused on devising teaching units which made explicit the grammatical features related to meaning-making in different genres in order to foster metalinguistic understanding of how to write that particular genre. A slightly different line was taken in an earlier study by Fogel and Ehri (2000) by matching the metalinguistic knowledge to the identified needs of learners. Using a guided practice approach, and addressing the need to understand the difference between Black Vernacular English (BVE) and Standard English (SE) in writing, they 'clarified for students the link between features in their own nonstandard writing and features in SE' (Fogel and Ehri, 2000, p.231). The EPPI review of grammar teaching (EPPI, 2004; Andrews et al., 2006), which concluded from its meta-analysis that there was no evidence of a positive effect of grammar teaching on students' writing, nonetheless argued that the Fogel and Ehri study pointed to the importance of making connections between grammar and writing, noting that 'differences between BVE and SE are grammatical issues, but it is not until such differences are understood and then practised in writing, that they take effect' (EPPI, 2004, p.41). What is salient here is that the pedagogical focus was matched to students' needs as writers, and that explicit links were made between the grammatical knowledge and its application in writing.

The relationship between grammatical metalinguistic knowledge and application in writing

This notion of connectivity between metalinguistic knowledge and its application in writing is important. Gombert (1992), in his framing of metalinguistic understanding as both 'activities of reflection on language and use' and individuals' 'ability to monitor and plan their own methods of linguistic processing' (1992, p.13) distinguishes between knowledge and application. More recently, Cameron (1997) maintained that 'knowing grammar is knowing **how** more than knowing **what**' (1997, p.236), highlighting that grammatical metalanguage facilitates language investigation, reflection and analysis, rather than being an end in itself. These distinctions point to the significance of attending to metalinguistic understanding of writing in terms of both knowledge and knowledge-in-action.

The cognitive demand of writing for writers, both novice and expert, is well-documented (e.g. Hayes and Flower, 1980; Kellogg, 2008) and 'knowing how' requires writers to bridge between their declarative grammatical knowledge and their formulation and revision of written text. As Gombert's distinction above signals, one element of this bridging is developing the capacity to self-regulate: indeed, Hayes and Flower argue that 'a great part of the skill in writing is the ability to monitor and direct one's own composing process' (1980, p.39). For many inexperienced writers, this self-regulation is difficult (Kellogg, 1994) in part because they find it hard to identify their writing problems and to know what to do to remedy them. Often interventions focus upon supporting the

development of self-regulation capability (Harris et al., 2008; Graham and Harris, 2012), but for inexperienced or less proficient writers, the capacity to self-regulate is often thwarted by limited metalinguistic knowledge for writing to draw on. Bereiter and Scardamalia (1987), in describing their now well-known model of writing developing from knowledge-telling to knowledge transforming, also note that grammatical knowledge can support self-regulation by 'making covert processes overt' and by providing 'labels to make tacit knowledge more accessible' (1987, 57). At the same time, more recent research is signposting that the pathway from knowledge to knowledge-in-action is enabled when grammar and writing share a single instructional context (Fearn and Farnan, 2007; Macken-Horarik, 2011; Macken-Horarik et al., 2015). This drawing together of grammar and writing within a shared learning focus enables the kind of linguistic decision-making which is so central to the processes of composition and revision.

Grammar as choice:

Linguistic decision-making is a substantial part of the complex decision-making which Kellogg (2008) characterises as fundamental to the writing process and which Vygotsky (1986, p.182) described as 'deliberate semantics'. He notes that writing, in contrast to the spontaneity of speech, demands 'deliberate structuring of the web of meaning' (1986, p.182) and he argues that grammatical metalinguistic knowledge enables the learner to have more conscious control of language. Conscious control facilitates decision-making because it opens up the possibilities of choice, and a more discriminating use of language (Carter, 1990, p.119). The idea that grammar might be linked with choice runs counter to popularist and prescriptivist views of grammar as the arbiter of propriety but it is well-aligned with contemporary linguistic theorisations of grammar, particularly functionally-oriented theories of language such as those proposed by Halliday (2002). We noted earlier that the conceptualisation of grammar informing this study draws on Halliday and Mathiessen's notion of lexico-grammar, adopting a trinocular perspective which considers lexico-grammatical features in the context of semantics and phonology. They also note that 'being a functional grammar means that priority is given to the view 'from above'; that is, grammar is seen as a resource for making meaning - it is a semanticky kind of grammar'. In other words, the inter-relationship of lexico-grammar and semantics is central to Hallidayan thinking, where grammar is seen as 'a network of inter-related meaningful choices' (2014, p.49).

However, the notion of grammar as choice is not confined to Halliday and systemic functional linguistics. Carter and McCarthy (2006) distinguish between the grammar of structure, the rules which govern the system of language, and grammar as choice, the range of possibilities open to all speakers and writers in different contexts: they emphasise that 'the grammar of choice is as important as the grammar of structure' (2006, p.7). And similarly, Crystal argues that 'it is always a matter of choice. Whether in school or society, we have in our heads a wide range of grammatical constructions available for our use, and it is up to us to choose which ones will work best to express what we want to say and to achieve the desired effect' (2004a, p.13). The linguistic choices we make in writing are not simply matters of personal preference or linguistic etiquette, they are fundamentally powerful ways of meaning-making. The simple shift of a pair of adjectives to a post-modifying position subtly alters both the rhythm and the semantic emphasis of the sentence:

Then, out of the darkness, came a lady, dark-haired and beautiful, wearing a gown of wine-red.

Then, out of the darkness, came a dark-haired and beautiful lady, wearing a gown of wine-red.

just as the choice of a passive can allow an agent to abdicate responsibility. Indeed, as Micciche (2004) observes, ‘the grammatical choices we make, including pronoun use, active or passive verb constructions, and sentence patterns— represent relations between writers and the world they live in’ (2004, p.719). In this way, grammatical metalinguistic knowledge is, as Halliday conceived it, a way of thinking about language ‘with grammar in mind’ (Halliday, 2002). Macken-Horarik adopts the Hallidayian construct of grammatics to explore the writing choices students make in their text production, and argues that grammatics ‘offers students ways of shaping utterances to particular rhetorical effects’ (Macken-Horarik et al., 2015, p.153). She proposes a model of grammatics which integrates coherent knowledge about language choices; rhetorically appropriate choices, portable understandings of language which can transfer from one context to another, and cumulative learning, where students build their knowledge progressively through schooling (Macken-Horarik et al., 2011, p.21).

In summary, the theorisation of grammatical metalinguistic knowledge proposed here is one which positions functionally-oriented grammatical metalinguistic knowledge as a tool for supporting writers’ understanding about how to shape written texts and which draws on the notion of grammar as choice. In this way, grammatical choice and the making of meaning are brought into a coterminous relationship. Given emerging empirical evidence from our own work and others that such an approach can result in improved outcomes in writing, but taking into account evidence from our earlier work that able writers benefited more strongly than less proficient writers, we set out to investigate this further. The research question informing the study reported here was: *does an intervention for less proficient writers, incorporating grammatical metalinguistic knowledge designed to address their identified writing needs support improved attainment in writing?*

Methodology

The research design for this study mirrored as closely as possible the design of the earlier study to permit reliable conclusions to be drawn regarding the two datasets. The study was mixed methods, with a quasi-experimental design, complemented by a qualitative dataset. The principal differences between the parent study and the one reported here were that the sample size was smaller, it was not a randomised controlled trial, and that before designing the intervention materials, there was a preliminary data analysis phase determining the characteristics of writing in less proficient writers which the teaching would address.

Student Sample:

The student sample involved 315 students aged between 12 and 13 who were identified as less proficient writers. This selection was made using the national test results for writing at age 11, where the age-related minimum expectation is that students will achieve level 4, with some achieving higher levels. All the students in the sample were below or just on the level 4 borderline, thus representing a group who were below or just at minimum age-related expectations at age 11. In addition, the students were all in classes grouped by attainment which represented below average attainment in writing. 7 schools participated in the study, each with two classes involved, one assigned to the intervention, and the other assigned as a comparison group. An analysis of the initial sample (Table

1) indicates the groups were well-matched, with numbers evenly split between the two groups, a good gender balance, and both groups having a mean writing score at age 11 of Level 3.7, and thus below age-related expectations.

SCHOOL	INTERVENTION				COMPARISON			
	Class size	Boys	Girls	National Writing Score at 11 (mean)	Class size	Boys	Girls	National Writing Score at 11 (mean)
A	24	13	11	3.8	26	11	15	3.5
B	24	15	9	4	29	16	13	4
C	23	12	11	3.3	16	10	6	3.5
D	21	12	9	3.8	21	17	4	3.6
E	21	13	8	3.6	21	9	12	3.5
F	23	14	9	3.6	26	10	16	4
G	22	8	14	3.8	18	11	7	4
Total	158	87	71	3.7	157	84	73	3.7

Table 1: Student sample at the outset of the research

Preliminary Writing Sample:

The initial analysis of writing to determine the writing needs of less proficient writers was undertaken drawing on a corpus of written texts from a previous study (Myhill, 2009) which allowed us to select 50 pieces of narrative writing drawn from a sample of 12-13 year olds, all at level 3. A lexico-grammatical analysis of these texts at sentence level determined their linguistic characteristics and a text level analysis also considered overall composition and effect. The text level analysis was intended to indicate whether weaknesses in overall textual design of narrative might be improved by attention to lexico-grammatical features which support narrative writing. This analysis indicated that less proficient writers in this age group wrote narratives which typically demonstrated:

- Limited use of internal sentence punctuation;
- Frequent omission of full stops or inaccuracy at sentence boundaries;
- Limited description through noun phrase expansion;
- Limited sentence variety with overuse of long, complex sentences;
- Very plot-driven writing, with little establishment of character or setting;
- A tendency towards writing which reflected visual modes;
- A tendency to use language patterns reflecting oral rather than written genres.

The Intervention:

This analysis of the typical characteristics of narrative writing in this group informed the design of the intervention materials. One element of this analysis highlighted that their narratives often reflected visual modes and oral language patterns which may reflect a reliance on visual narratives, drawn from television, film, or gaming to support the generation of written narratives. Accordingly, the teaching materials sought to draw attention to the difference between oral and written narratives, and between narratives told visually and those told verbally by showing learners how grammatical choices could help them write more effective stories. Examples of how the teaching materials focused upon

this relationship between the demands of a narrative text and particular grammatical choices are outlined in table 2 below.

Learning focus for writing	Grammatical Focus
Character description in narrative and how writers need to choose words and phrases to convey visual images	noun phrases: choice of adjectives for precise physical descriptions; adding character detail through post modification; post modifying parenthetical adjectives adjectives for emphasis; using noun phrases to show not tell
Narrative hooks	through use of verbless sentences, short simple sentences, cataphoric reference
Writing narrative endings	short sentences; verbless sentences; thematic links to the opening; repetition of vocabulary or images in the opening; change in address to the reader
Managing key moments in the plot	Punctuation choices eg ellipsis, sentence boundaries, parenthetical commas Short sentences for moment of crisis; sentence variety

Table 2: how the teaching materials addressed grammatical choice

The parent study established a connection between a) the theoretical conceptualisation of grammar as a meaning-making resource, allowing exploration of the relationship between grammatical choice and meaning in texts, and b) a pedagogical approach which translated this theoretical framing into classroom practice in the teaching of writing. Accordingly, the teaching materials always made a meaningful connection between a focus on a grammatical structure and what it might achieve in a piece of writing, and this connection was always enabled by using authentic examples of the text being written to exemplify the grammatical choices that other writers had made. For example, one of the units of work in the parent study looked at how, when writing poetry, a writer could create a frozen moment in time, crystallising an experience, through the use of verbless sentences using only noun phrases. Theodore Roethke's poem 'Boy on Top of a Greenhouse' was used as the authentic text which modelled this grammatical choice. In addition, to foster metalinguistic understanding about writing and 'being able to talk about what we know' (Crystal, 2004b, p.12), the pedagogical approach encouraged teachers to orchestrate high quality metalinguistic talk about writing and grammatical choices (Myhill and Newman, 2016 and Myhill, Jones and Wilson 2016).

The unit of work covered approximately four weeks of teaching and adopted fully the pedagogical principles of the earlier study. For example, when considering how grammatical choice can convey visual descriptions of characters in words, the students looked at how children's author, Michael Morpurgo, had described the character of Kensuke in 'Kensuke's Kingdom', largely through his choice of adjectives and noun phrases which helps readers visualise the character:

He was diminutive, no taller than me, and as old a man as I had ever seen. He wore nothing but a pair of tattered breeches bunched at the waist, and there was a large knife in his belt. He was thin too. In places – under his arms, round his neck and his midriff – his copper brown

skin lay in folds about him, almost as if he'd shrunk inside it. What little hair he had on his head and his chin was long and wispy and white.

Morpurgo (1999, p.69)

The unit of work used urban myths as a tool to explore differences between oral and written narratives, and a graphic narrative from a Bart Simpson comic was used as a resource to highlight differences between visual and written narratives. An overview of the unit is presented in Table 3.

PURPOSE	LEARNING OBJECTIVES
<p>This scheme of work focuses on developing students' awareness of the need to craft and shape fictional narratives. It draws attention to the fact that plot alone does not make an effective story, and develops students' understanding of narrative structure and of character development. Through the use of visual texts, it illustrates that information conveyed visually on screen or in graphic texts needs to be conveyed in words in writing. At the same time, it sets out to highlight that shaping of sentences and sentence boundaries, as well as demonstrating some of the grammatical constructions which can support effective crafting of text</p>	<ul style="list-style-type: none"> • Make links between students' reading and viewing of fiction and the choices they make as writers • Understand possible narrative structures and the idea of a narrative introduction, problem, crisis, and resolution • Understand how authors describe characters • Understand how writers vary sentences for a writerly purpose • Understand how punctuation marks sentence boundaries and signals nuances in meaning • Understand how to manage description and explanation to maintain the reader's interest • Know how to shape, craft, edit and evaluate own fictional narrative writing
<p>Assessment Outcome: Write a story of no more than 500 words, stimulated by the Storybox [a stimulus of artefacts], by an image, or by an individual choice, which focuses on the development of character and effective shaping of plot.</p>	

Table 3: Overview of the Intervention Unit of Work

The intervention group were given the medium term plan for the unit of work, plus detailed lesson plans and their associated resources; the comparison group simply received the medium term plan. The teachers in the intervention group attended one half-day training at the university where they were introduced to the pedagogical principles informing the intervention, and given a detailed introduction to the unit of work and its resources.

Pre and Post-test Measures:

The pre and post-test measures used the same two writing tasks that were used in the parent study, and, as previously, adopted a cross-over design to minimise any task effects. Half the sample took Task 1 at the pre-test point and the other half took Task 2, and this was reversed at the post-test point. Task 1 invited students to *Write an account of a challenge you have faced in your life so far for a school magazine feature on 'Challenging Situations'*, whilst Task 2 invited them to *Write about your childhood fears, real or imagined, for a school magazine feature on 'Things that frighten us when we are small'*. The mark schemes and scoring procedures developed by Cambridge Assessment (an independent agency familiar with national testing procedures in England) for the previous study were used again in this study. Each piece of writing could be awarded a maximum of 30 marks, and the total score was

achieved through assessment of three sub-components, in line with the marking of national tests of writing: Text Structure and Organisation; Sentence Structure and Punctuation; and Composition and Effect. A team of independent markers blind-marked the writing: each piece of writing was double marked and if there was a discrepancy between the scores, a third marker was used to provide a 'resolution' mark.

Writing Analysis:

The pre and post-test writing samples were analysed qualitatively to investigate whether and where there was evidence of improved writing proficiency as a consequence of the intervention.

This article draws principally on the findings from the statistical data.

Findings

The initial student sample at the start of the study was 315, but there was an attrition rate of 23%, leaving a final sample for statistical analysis of 243 students. This attrition rate is rather high and is indicative principally of absence levels in these groups, rather than other reasons for attrition such as moving classes or schools. High absence rates in England and Wales are more prevalent amongst students who receive Free School Meals, a proxy for social disadvantage, and for students with Special Educational Needs (see for example, DfE, 2016, p.19) and these are the same groups which tend to constitute lower-performing classes such as those in the study. Moreover, this attrition rate captures only those who were absent for either the pre or post-test but it does not capture those students who were absent for one of the intervention lessons. Many of the students were not highly engaged with school and the correlation between poor attendance and poor writing performance is relevant, and links with national data on the correlation between attendance and attainment (DfE, 2016).

The pre-test scores indicate that as expected, the students in these classes were not attaining high outcomes in writing. The maximum score for the writing test was 30, but as less proficient writers, they typically scored substantially below the full mark as Table 6 further below indicates. Tables 4 and 5 exemplify the range of attainment present across the sample by presenting the complete pre and post-test writing samples from two students in the intervention group.

Pre-Test	My childhood fear is that when i flush the looe that a monster comes out. It skeard me beause afthe i had been to the looe and i pule the flush. The big scaery monseter come sout a chased me arnde the House.
Post-Test	Having my own room when i was little busecase when i was 2-3 i was in a room with my sisters when i was nearly 4 i move in to my own room. I had to takle it by having the landing light on and leaving the door open. I look back and see now that it was really stupid and i should have jest got over it easy. Althought at the time it felt horrible it was kinnda a big deal wne i was tree but now I am so over it.

Table 4: Example of pre- and post-test writing from a lower-attaining less-proficient writer

This sample from one of the lowest-attaining students indicates a writer with very basic difficulties with spelling and control of sentence structure, as well as extremely limited development of the personal narrative. The higher-attaining student in Table 5 has fewer of the most basic writing problems and writes a longer text than the lower-attaining student at both pre and post-test. There is greater control of sentences and more evidence of narrative development and control. Nonetheless, it falls well below the expected level of attainment for a student of this age in England.

Pre-Test	<p>One of my childhood fears were spiders and they still scare me. They scared me because the can bite you and they looked really creepy with their 8 legs, the way they hang on their webs and dangle down. This has been my fear for as long as I can remember, so I'll say all my life.</p> <p>Another one of my fears were monsters under the bed....The thing that scared me the most about it was that I though they would crawl out from underneath my bed whilst I was sleeping and then they would grab me and eat me.</p> <p>Now I still don't believe in them and know that they aren't real.</p>
Post-Test	<p>At the time, it felt like the biggest challenge of my life. I was, still am, scared of heights and I had to do abseiling. I didn't exactly have to, but I kind of wanted to since I had never done it before. It wasn't one of those types where you had to climb up a wall and abseil down. It was where I was at the top of a wooden wall that was held up by metal poles. Looked almost like a building site. I remember how nervous I was, just waiting to climb up the ladders and up to the top. I was a bit worried that I was going to fall off. I was waiting anxiously and watched the rest of my class go. I wasn't last. I went towards the end.</p> <p>It was my turn and every step I took up the ladders, my heart was beating faster. The instructor buckled me up and tied some ropes. I had to stand on the edge, on my tiptoes, whilst he tied some more ropes up.....After all the ropes were tied I had to lean back slowly and stretch out my legs. I was still shaking. I was scared to move, but I did it anyway.</p> <p>My teacher untied the ropes and I walked back to the rest of my class. I was smiling and really pleased with myself. I know now, that when I come across it in the future, I can look back and remember this moment.</p>

Table 5: Example of pre- and post-test writing from a higher-attaining less-proficient writer

Although the two groups had very similar writing performance on the national writing tests at age 11, the descriptive statistics indicate that at the pre-test point, the Comparison group scored more highly than the Intervention group. However, the Intervention group appears to have made more rapid progress between pre and post-test with a gain score of 0.8 compared with 0.5 for the Comparison.

Group	Number	Pre-test score: mean	Post-test score: mean	Gain score
Comparison	116	5.4	5.9	0.5
Intervention	127	4.6	5.4	0.8

Table 6: Mean scores of the two groups pre and post-test

Behind this descriptive data for the whole sample is considerable variation at class level in terms of patterns of performance (see Table 7). The pattern of improvement is more consistent in the Intervention group even though the rate of improvement differs.

School	Number of students	Group	Pre-Test Mean	Post-test Mean
A	20	Comp	7.6	7.6
B	23	Comp	5.4	6.0
C	12	Comp	1.2	1.0
D	8	Comp	3.8	2.6
E	14	Comp	4.9	5.6
F	17	Comp	7.4	8.4
G	22	Comp	5.2	6.4
	116		5.4	5.9
A	19	Int	4.5	6.6
B	19	Int	8.1	8.7
C	19	Int	3.7	4.4
D	12	Int	3.2	3.5
E	19	Int	4.5	5.4
F	19	Int	3.5	4.1
G	20	Int	4.6	4.6
	127		4.6	5.4

Table 7: Class and group level results

In the Comparison group, two groups performed less well at post-test, one group equalled its pre-test mean, and four groups improved; in the Intervention group all groups improved, bar one, which equalled its pre-test mean. Although the rate of improvement is stronger in the Intervention group, the variability at class level may be due to the effect of the teacher and the way the intervention was implemented. This variation is more visible in the graphic representation of Table 8.

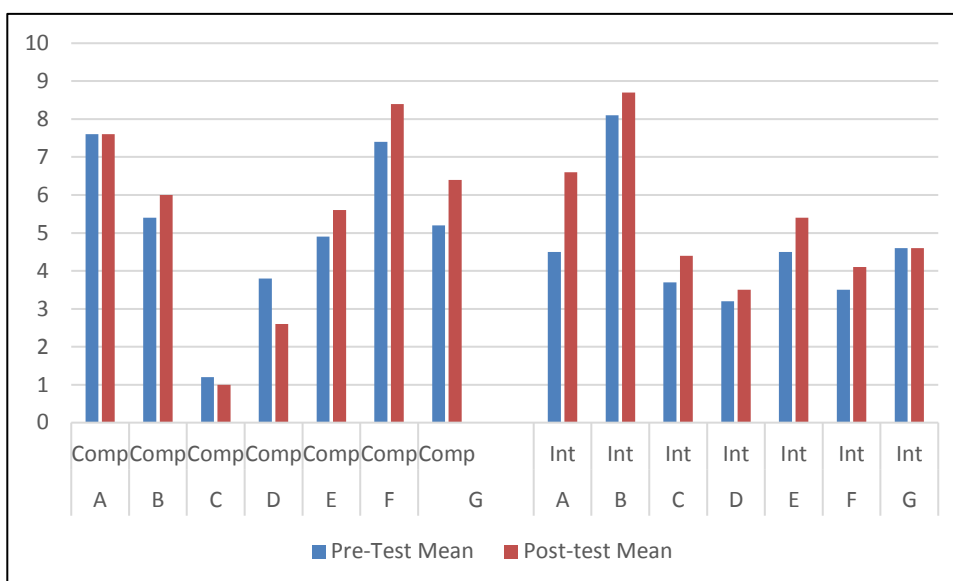


Table 8: Different rates of mean improvement between pre and post-test.

Given that the descriptive statistical data indicates a pattern of stronger improvement in the intervention group, inferential analysis was undertaken to determine if these differences were statistically significant. In line with the quasi-experimental design, using existing classes designated as less proficient writers, and because the pre-test showed that the comparison group had performed more highly, an analysis of covariance (ANCOVA) was used to control for pre-test differences. Before running the ANCOVA tests, checks were made to determine whether the relationship between covariate (pre-test results) and the dependent variable (post-test results) was the same for each group. A test of linearity, and Levene's test of equality of error variances showed that the assumptions had not been violated, although the check on the homogeneity of regression slopes gave a result which is just significant ($p = 0.47$), marginally violating assumptions of homogeneity. The ANCOVA analysis indicated that the different outcomes of the intervention and comparison group was statistically significant ($F(1, 240) = 3.787, P = 0.05$). Further analyses were conducted at the level of the three sub-components of the marking rubric: Sentence Structure and Punctuation; Text Structure and Organisation; and Composition and Effect. This indicated that the scores for Text Structure and Organisation, and for Composition and Effect were not statistically significant in their difference, whereas for Sentence Structure and Punctuation there was significance at the 99% level ($p = 0.02$). A calculation of effect size using Glass's Δ gave a small overall effect size of 0.17, and an effect size of 0.33 for the improvement in sentence structure and punctuation.

In summary, then the data, both descriptive and inferential, do provide evidence of stronger improvement in the intervention group, although the effect size is small. The data also shows that the improvement was substantive in the area of sentence structure and punctuation, suggesting a direct benefit of linguistically-aware teaching on these students' management of sentence structure. The variability between classes points to the likely significance of the teacher in managing the intervention. Nonetheless, an intervention of four weeks is a short period in which to achieve improved performance in a task as complex as writing.

Discussion:

Before considering specifically the effects of the intervention on students' writing, it is worth noting the high attrition rate of 23% and the effect of absence on attainment. The classes chosen were selected because of their low attainment in writing, and the intervention targeted improved outcomes in writing. However, their low attainment in writing may have been less about struggling to manage being an effective writer and more about being disengaged from school and education in general. Some less proficient writers are students who struggle to master writing; whereas other less proficient writers are students who are disengaged from school and whose poor behaviour and attendance limit their opportunities to learn. The correlation between absence and attainment is well-established: for example, the DfE (2016) demonstrate from national datasets that as absence increases so attainment decreases, and Gottfried (2010) finds a similar pattern in the United States. Research also indicates that there is a strong relationship between absence and socio-economic status: Schagen et al. (2004) report that the number of students who are eligible for free school meals (a proxy for social disadvantage in England) is 'associated with increased levels of absence' (Schagen et al., 2004, p.12). This inter-relationship of absence, attainment and socio-economic background is significant (Mortimore and Whitty, 2000; Muijs et al., 2009); and in terms of literacy achievement, the link between reading attainment and socio-economic background is evidenced in studies such as those by Noble et al. (2006), Buckingham et al. (2013) and Bergen et al. (2016). There are no parallel studies relating to writing attainment but given the close relationship between reading and writing, it seems reasonable to assume the effects would be similar. Thus although this study showed a small positive effect on writing for this intervention, it may be that future interventions needed to take greater account of the broader socio-economic factors leading to absence, as well as addressing the specific and explicit demands of shaping written texts.

This notwithstanding, the overall positive effect size (0.17) and the higher effect size for sentence structure and punctuation (0.33) are testimony to the potential benefits of explicit grammar teaching which is directly linked to the teaching demands of a particular genre (here, narrative) and the identified learning needs of the writers. This study suggests that teaching which is linguistically explicit can help less proficient writers improve if the input is well-matched to their needs. As noted in the methodology, these writers had particular problems with sentence structure and managing sentences, as well as poor management of narrative plot and an over-reliance on oral language patterns. The direct effect of the intervention on sentence structure addresses a key identified area of need for these learners, and aligns to the particular focus of the intervention on lexico-grammatical features. The qualitative analysis of the pre and post-test writing samples confirmed this: there was clear evidence of improved punctuation and sentence management in some writers, not simply in terms of accuracy, but also in more crafted shaping of sentences, supporting characterisation and plot development. For example, in the post-test of the higher-attaining weak writer, quoted earlier, she writes that 'I was, still am, scared of heights and I had to do abseiling': this interposing of a second clause 'still am' in the middle of the sentence is an improvement for this writer on her pre-test writing. The intervention was less successful in supporting the reduction of speech-like structures. Indeed, both the samples of writing provided earlier show oral patterns even in the post-test: the use of informal oral intensifiers (a bit worried; really pleased; really stupid); the use of an adjective in place of an adverb (I should have just got over it easy); phonological representations of oral speech (kinda) and common oral phrases (I am so over it).

The intervention reported here draws on a theoretical rationale, positioning grammatical metalinguistic knowledge as a meaning-making resource (Halliday, 2002) which supports developing

writers' understanding about how to shape written text. It draws heavily on the idea of grammar as choice, in which the linguistic decisions we make in writing are one of the tools for making meaning. The associated pedagogy is explicit about the relationship between grammatical choices and the meanings those choices create, and does not eschew grammatical metalanguage. This explicitness is first and foremost pedagogical: it is the *teacher* who is explicit about how grammar is instrumental in creating particular effects or details in writing with the goal of 'making implicit knowledge explicit' (Carter, 1990, p.117) for the learner. However, it is also a goal of the pedagogy to foster metalinguistic understanding in writers, enabling them to 'learn to manipulate the semiotic resources available to them in order to make meaning' (Andrews and Smith, 2011, p.24). This metalinguistic knowledge is thus not narrowly concerned with grammatical accuracy but about its application to writing, fostering awareness in writers of the repertoires of possibility available to them linguistically. The evidence reported here indicates that for these less proficient writers the intervention successfully supported improvement in the writing of narrative, but particularly at sentence level: importantly, however, the improvement in sentence management was not simply about accuracy, but also in how sentences were shaped for writerly effect.

Conclusion

This study sought to investigate whether an intervention for less proficient writers, incorporating grammatical metalinguistic knowledge designed to address their identified writing needs supports improved attainment in writing. The statistical outcomes provide evidence of a positive impact, with an effect size of 0.33 on students' improvement in sentence structure and punctuation. There are limitations to the study, notably in the nested data and the absence of randomisation, but also in the limited data gathered regarding how the teachers implemented the intervention. However, this study is part of a set of cumulative studies in this area, and was designed to answer a question raised by the parent study regarding the efficacy of this pedagogical approach for weak writers. To that extent, it makes an important contribution to a growing body of evidence of the potential positive impact of linguistically-aware teaching of writing, drawing explicit attention to grammar as choice, and underlining that pedagogical choices need to be well-matched to writers' needs. The results raise further questions for future research. More broadly, the high attrition rate flags the need for more systematic research which considers the likely inter-relationships between absence, socio-economic status and writing development. More specifically, it invites further studies which explore the extent to which linguistically-aware teaching translates not only into improved writing outcomes but also into more metalinguistically-aware writers.

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