

The benefits of explicit teaching of language for curriculum learning in the physical education classroom

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ABSTRACT

Among the many subjects taught at primary, secondary and tertiary institutions physical education (PE) has had limited discussion with respect to the language of PE. As an examination subject in secondary school, physical performance is one key factor leading to success in PE; however, PE disciplinary knowledge is often assessed through written or spoken texts, resulting in students needing to have both the ability to physically perform and the disciplinary literacy required to demonstrate knowledge of the subject. The present paper extends the discussion of content and language integrated learning (CLIL), by providing a theory of language and a pedagogy informed by systemic functional linguistics; and investigating the benefits of the explicit teaching of curriculum language related to PE in order to prepare students to succeed in PE exams. Data including observations and videos of classroom interaction, texts written by students and interviews with teachers and students were collected at Hamstead Hall Academy, Birmingham, UK, where over 50% of students have English as an additional language. The data were analysed to investigate if the explicit teaching of the language of PE had a positive impact on both teachers and students. In focussing specifically on the language of PE, the teachers became more aware of the role of language as meaning making resource, students' written assignments improved and overall the PE exam results increased dramatically. These findings illustrate the benefit of explicitly teaching discipline specific language for curriculum learning, and highlight the language of PE, which tends to be a marginalised subject in the discussion of ESP.

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1. Introduction

Physical Education (PE) is often a compulsory subject in primary and secondary schools, and can be an examination subject in many countries including the UK. In the UK, PE can be taken as a General Certificate of Secondary Education subject (GCSE, usually at the age of 16 years), and an Advanced Level subject (A Level, usually at the age of 18 years); in Europe and internationally PE is an examination subject within the International Baccalaureate (IB). The GCSE curriculum states that PE “should equip students with the knowledge, understanding, skills and values to develop and maintain their performance in physical activities and understand the benefits to health, fitness and well-being” (Department for Education, 2015, p.3). PE as a subject involves physical performance along with practical and theoretical knowledge related to applied anatomy and physiology, movement analysis, data analysis, sport psychology, socio-cultural influence of sport, health, fitness and well-being, and physical training. Slater and Butler (2015), focusing on PE in the primary school curriculum, identify the relationship between physical performance in PE and

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the role of language accompanying action. They also distinguish between ‘action discourse’ which relates to the action in PE and ‘reflection discourse’ as talk about social practice. In this paper, we focus on the latter, reflective discourse, which becomes increasingly important when the assessment of PE involves writing or speaking components. In 2014, PE, History and Geography were subjects that were identified as under performing, during an Office for Standards in Education (OFSTED, a Government body which focuses on the assessment of quality and standards in schools) visit to Hamstead Hall Academy (HHA), where the study takes place. OFSTED stated that “many pupils struggled to improve their verbal responses in lessons and their explanations in their written work, resulting in lower marks in examinations, particularly in history, geography and in physical education” (OFSTED, 2016). Within the written component in GCSE PE for example, knowledge such as nutrition, body types and risk reduction measures are often taught in the classroom as theoretical concepts, where language constitutes meaning; in contrast, in a physical performance action is often accompanied by language. An example of a written exam question is, “The ability to identify and reduce risk associated with physical activity is essential to minimise injury. For a physical activity of your choice, explain how to reduce a variety of risks associated with that activity in order to maintain physical health”. When responding in writing to this or similar questions, language plays a crucial role and may create challenges for students and perhaps teachers in relation to the representation of knowledge and the disciplinary literacy required. Similar to the development of disciplinary literacy in other subjects, there is a need for a pedagogic approach that connects discipline specific language and knowledge and also incorporates the explicit teaching of language for curriculum learning directly relevant to the subject area (Humphrey, 2017). When explicitly teaching language for curriculum learning, as pointed out by Humphrey (2017), Macken-Horarik, Love, Sandiford, and Unsworth (2018), and Martin and Maton (2013) among others, a metalanguage (the language used to talk about language) shared between teacher and learner, reinforced across the curriculum is extremely advantageous.

Drawing on a larger project, which investigates a whole school approach to the explicit teaching of language for curriculum learning across the curriculum, in the present paper we focus only on PE. While there is an increasing need for understanding how PE knowledge can be construed through language, little research has been conducted to examine how language is used to teach PE, and the impact of explicit teaching of language in the PE classroom on teachers and students (Slater & Butler, 2015). To address this gap, the paper investigates how the explicit teaching of language is introduced and shared among teachers and students in classroom interactions, with the aim of illustrating how teachers and students potentially benefit from the explicit teaching of language within the PE classroom. We first introduce and review studies that discuss metalanguage, the explicit teaching of language and discipline specific literacy, before focusing on the role of language and related studies within PE. Although it is beyond the scope of the present study, our findings in the larger project and other recent work by Forey and Polias (2017), He and Forey (2018), Humphrey (2017), Martin and Maton (2013) and Polias (2016), Polias and Forey (2016) demonstrate that the explicit teaching of language for curriculum learning is also valuable for PE and other subjects.

2. Literature review

This section reviews opposing views on the value of metalanguage, and recent studies related to the impact of the explicit teaching of language and metalanguage for curriculum learning and in particular we provide an overview of the limited studies that have investigated language in the PE classroom. Macken-Horarik (2008) highlights the need for a metalanguage that is linguistically driven for teaching literacy knowledge and a metalanguage that highlights meaning, organisation and register within the specific discipline. The pros and cons of using a metalanguage have been debated elsewhere. For example, Bourke (2005, p. 93) argues that metalanguage is a “complex jargon” and unnecessary, whereas Macken-Horarik (2008, p. 46) positions metalanguage as “a powerful navigational tool” that enables teachers and learners to “move forward” whilst engaging with complex social semiotic practices, relevant to meaning making. Metalanguage is seen as “explicit knowledge about language that can be brought to conscious awareness, articulated, and used reflexively as a cognitive tool to construct knowledge about language” (Gebhard, Chen, Britton, & Graham, 2014, p. 107), and thus a powerful tool that can have tremendous benefits for teaching and learning (Gebhard et al., 2014). Following Gebhard et al. (2014), Macken-Horarik (2008) and others, in the present paper, we take the position that a metalanguage based on a rigorous theory of language, such as systemic functional linguistics (SFL) in combination with genre-based pedagogy and the explicit teaching of language for curriculum learning can have a positive impact on teaching and learning.

2.1. Teaching metalanguage in the classroom

Recent studies point out the positive impact of using metalanguage for both students and teachers (e.g. Bunch, 2013; de Oliveira and Iddings, 2014; Hu, 2010). Hu (2010) outlines five major advantages of using and understanding metalanguage in the classroom, which are nurturing learners’ metalinguistic awareness; creating links between learners’ first and second language; providing resources for discussing language explicitly; allowing explanatory precision; and enhancing learners’ capacity to learn new linguistic features. Such benefits support students’ language development and alleviate language difficulties through an ongoing sharing of language and talk about language that extends from one lesson and one subject to subsequent lessons and across subjects. In addition, a metalanguage that acts as a resource to talk about meaning, text and language choices extends existing metalanguage that focuses on form, spelling and grammatical errors (e.g. Fortune, 2005; Gebhard, Chen, Graham, & Gunawan, 2013).

Previous studies focusing on the use of metalanguage in the classroom have primarily involved the examination of writing instruction in English language subjects (e.g. Basturkmen, Loewen, & Ellis, 2002; Fortune, 2005). Recently, studies on the use of

metalanguage informed by SFL have been gaining traction (see for example, Byrnes, 2009; Gebhard et al., 2013; Macken-Horarik, 2005; Moore & Schleppegrell, 2014). These studies cover subject areas such as English Language Arts (e.g. Moore & Schleppegrell, 2014) and Science (e.g. Doran, 2017; Forey & Polias, 2017; Halliday & Martin, 1993; Macken-Horarik, 2002; Martin and Veel, 1998; Polias, 2016; Polias & Forey, 2016; Rose & Martin, 2012), Mathematics (O'Halloran, 2008, 2015) and Humanities (Coffin, 2006; Coffin & Derewianka, 2009), along with other disciplines. Studies have also started to emerge mapping the ontogenetic development of language across various stages of schooling (e.g. Christie, 2012; Christie & Derewianka, 2008; Macken-Horarik, 2002; Unsworth, 2006). However, few of these studies examine the disciplinary literacy features of PE.

Such research establishes that the use of a metalanguage is important, and equally important are the affordances and choices available to the teacher to use a metalanguage to explicitly teach language for curriculum learning. Within the present study, SFL metalanguage combines with the explicit teaching of language incorporated into genre-based pedagogy (Martin & Rose, 2012), also referred to as the teaching and learning cycle (TLC) (Martin & Rothery, 1986, Rothery 1994). The TLC is comprised of four stages: building the field; modelling and deconstructing the target genre, the text and the language; joint construction where the teacher and students redraft a text together; and finally independent construction (discussed in more detail below). The TLC was originally inspired by the work of Halliday (Halliday & Matthiessen, 2014) with respect to a theory of language, Bernstein (1996) and his contribution to the sociology of education and knowledge structure, and Vygotsky's (1978) concept of scaffolding. These three approaches to education have been incorporated into the TLC and further developed in Martin's (1999) genre-based pedagogy and Painter's (2005) guidance through interaction in spoken language development. As proposed by Custance, Dare, and Polias (2011) and Polias and Forey (2016), mini-cycles occur within the larger TLC, and these mini-cycles represent a more detailed teaching plan, as well as more opportunities for continuous and incremental student participation in the lesson, as illustrated in Figure 1. The TLC provides a scaffold for patterned classroom activities and interaction, where learners are both challenged and supported in order to develop and master knowledge and disciplinary literacy.

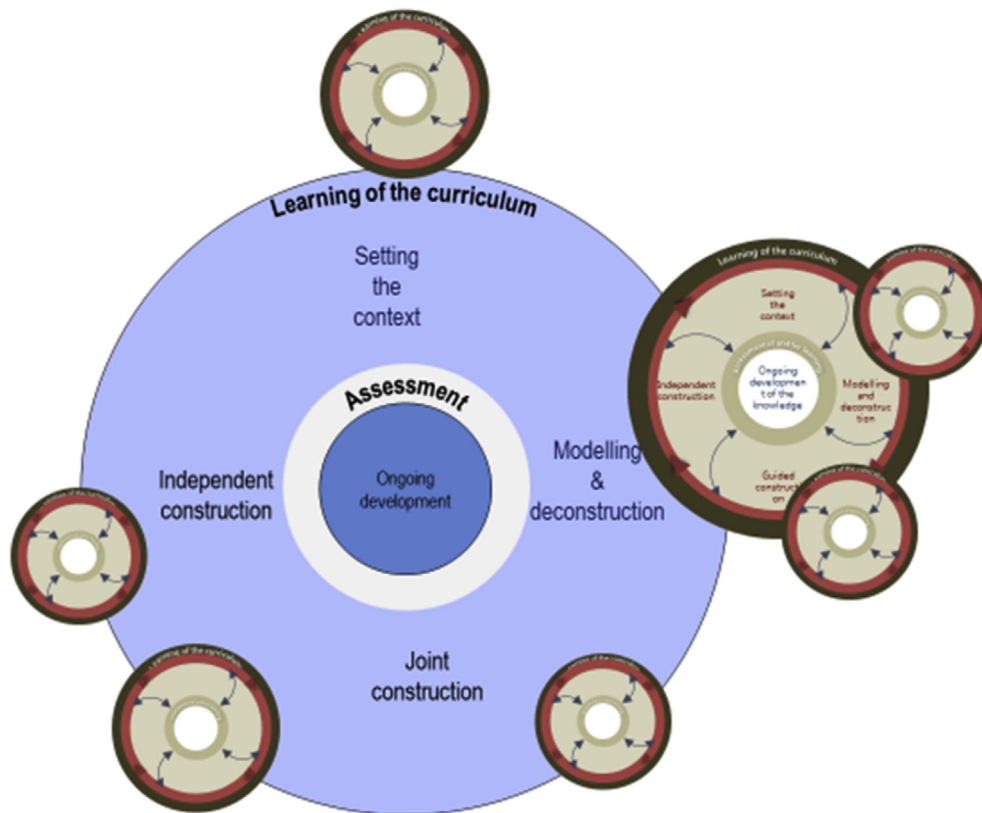


Figure 1. Teaching and Learning Cycle with mini-cycles within each stage (see Polias & Forey, 2016: 115).

From a teacher's perspective, the explicit teaching of language for curriculum learning is enhanced when there is a shared metalanguage within and between disciplinary teachers and their learners. An SFL metalanguage, which focuses on the function of language within the clause, the text and between genres, facilitates the potential to make language choices more visible. Gebhard et al. (2013) suggest that the introduction of metalanguage can facilitate a deeper understanding of disciplinary knowledge and the language constructing knowledge. The use of metalanguage and the explicit teaching of language within a discipline also creates "more synergic links between L2 reading and writing activities" and provides "students with targeted, meaning-based feedback on their writing" (Gebhard et al., 2013, p. 108). The use of metalanguage and the explicit

teaching of language expands the teachers' repertoire by enabling them to communicate their ideas, to highlight the language used to construct knowledge and experience within the target discipline, and provides a valuable resource for scaffolding students' learning as they write or speak about texts (Accurso, Gebhard, & Selden, 2016; Gebhard et al., 2013). In terms of assessment and feedback, explicit knowledge about language can better direct students' attention to information flow within a text as well as spelling and grammatical accuracy (Dreyfus Humphrey, Mahboob, and Martin, 2016). Adopting Halliday's (1978) trinocular view on language, explicit teaching of language focuses on meaning at a context level (e.g. *genre* and *register*, 'from above'), within the clause (e.g. *nominalisation* and *mood*, 'from below') and co-articulation of meanings (e.g. *Appraisal*, a tool used to unpack interpersonal meaning and *Ideational* meaning, a tool used to unpack how reality is constructed 'from around'). This trinocular perspective identifies meaning making choices found in the target text, informs both students' and teachers' reflective literacy and provides tools that are applicable beyond the classroom setting.

2.2. Academic language and physical education

There is a growing body of research literature on teaching PE through academic language or adopting Content and Language Integrated Learning (CLIL) (e.g., Clancy & Hruska, 2005; Constantinou, 2015; Coral-Mateu, 2013; Solomon & Murata, 2008). Constantinou (2015) points out that both pre-service and in-service PE teachers often encounter difficulties when integrating academic language and instructional tasks, and characterises academic register in terms of technical and sophisticated vocabulary, longer sentences and higher grammatical complexity. She recommends the inclusion of visual aids and other teaching resources in order to "ensure academic language is built into each and every lesson plan" (Constantinou, 2015, p. 12). Similarly, Clancy and Hruska (2005) focus on elucidating the language objectives that are integrated into the PE subject content. They develop language objectives commonly involved in teaching PE, including vocabulary capturing kin-aesthetic experience (e.g., *hop*, *curl*, *kick*), language skills and functions, as well as sentence patterns. Coral-Mateu (2013) provides detailed plans and teaching strategies for pre-service and in-service PE teachers that incorporate CLIL in their pedagogic approaches. The PE-in-CLIL approach links content knowledge (e.g., bodily movements, sport events, health awareness) and thinking skills to the target language. Coral-Mateu (2013) provides insights into how PE teachers can support students, especially those from a non-native English speaking background, to comprehend the subject content by making explicit the language objectives in the lessons. A language focus makes a positive contribution to learning, and a more long-term holistic approach to language across the curriculum could be extremely beneficial.

However, these studies focusing on teaching "about language" within the PE lesson, with an emphasis on vocabulary for example, raise a number of concerns regarding the nature of language, and pedagogic planning. The first issue involves a separation of language components and discipline specific content. For example, while Constantinou (2015) suggests incorporating academic language within the subject content, the teaching of language use is allocated a "separate section in the lesson plan" (p. 12), which is in contrast to our position, where language is viewed as integral to the construction of knowledge in PE. This proposal for a separate section of the lesson plan to be devoted to language teaching may create an extra workload for subject teachers, and the teacher might be resistant to taking up the role of "language teacher" in the PE classroom. Clancy and Hruska (2005) and Constantinou (2015) focus on the concepts of academic language or "language objectives" which are used to predominantly emphasise lower-level linguistic features, such as vocabulary and sentence patterns. The extent to which these features construe meaning as a coherent text in context is not clear. This could undermine both the students' and the teachers' understanding of how the texts and their functions are associated with the language features. The third issue involves the absence of explicit scaffolding strategies of teaching knowledge of both PE and language. Coral-Mateu's (2013) advice on PE-in-CLIL approaches adopts the term scaffolding; however, a theoretically grounded framework illustrating such scaffolding is not provided. Gibbon's (2009) language continuum has had some uptake in recent years by subject teachers in the UK classroom. Gibbon's language continuum refers to a continuum where language is seen as shifting register from commonsense, spoken, informal language at the left hand scale of the continuum to abstract, written, formal language at the other end (see Forey & Polias, 2017 for a detailed discussion of the register continuum in classroom contexts). However, often teachers have limited knowledge about language and what is meant by the term 'literacy' to be able to support learning beyond the surface level. If teachers do teach literacy in the classroom it is often surface level objectives such as vocabulary and grammar. Limited guidance and discussion is available that support lesson plans, obscuring the pedagogy and the role of the teacher and learner in schooling. The separation of content and language may render language a peripheral entity accompanying physical competence (e.g. Trost, 2006). Language may therefore become a mere augmentation to the PE learning experience.

To address the above concerns, the present study investigates how the explicit teaching of language can contribute to disciplinary literacy knowledge. We focus on the impact and value of the explicit teaching of language in order to examine how discipline specific knowledge, language and written genres specific to PE are valued and can have a positive impact on teaching and learning.

2.3. Research questions

We aim to answer the following research question:

What is the impact on teachers and students of the explicit teaching of language for curriculum learning in the PE classroom?

Before answering this research question, we outline the methodology adopted and the data collected in the present study.

3. Research methodology

3.1. Research site: Hamstead Hall Academy (HHA) - student population

The present study is part of an on-going larger study conducted at Hamstead Hall Academy (HHA) in Birmingham, UK. HHA is a mixed inner-city secondary school with a large sixth form (the final two years of secondary school, 16–18 years old), and has 1,100 students aged 11–18 years. Of the student population, 52.3% of students use English as an additional language (EAL), 4.5% are Special Education Needs (SEN) students, and 41% of students receive Pupil Premium funding (all figures of the student population in the school are well above the national average). Pupil Premium funding is a government grant provided to schools to reduce the attainment gap for disadvantaged children, and involves funding for free school meals and other supportive measures (www.gov.uk). Language and literacy were identified as an area in need of development; and in 2012, HHA allocated resources to support six teachers to attend a professional development (PD) language and pedagogy 30 hour course: “How Language Works” (HLW, see www.lexised.com for details of the workshop). The six teachers attending the HLW course included the Assistant Head for Teaching and Learning (an English teacher), the Assistant Head for Continuing Professional Development (a maths teacher), and one PE, IT, geography/history and science teacher. These teachers were given the responsibility to become *Teaching and Learning Champions*. In 2013, the HLW scheme was introduced to the whole school, and by June 2017 a total of 36 teachers had attended the HLW course.

The PE GCSE results in 2011 and 2012 were below the national average and yet the teachers were confident that the students were capable of achieving better grades. The percentage of students obtaining grade A* (A* is the highest grade, better than an A) to C for GCSE PE were 14% and 35% in those two years. This underperformance in PE was noted by OFSTED in their 2016 inspection report. The focus on language and literacy was established to address the less than satisfactory performance in PE and other subject areas. In order to review the focus on language and literacy the school invited the research team to investigate and collect evidence of the impact on both teachers and learners of this initiative. The present paper focuses purely on the impact of language and literacy on PE, and other related publications will follow.

3.2. Data collection

Data focussing on the teaching of PE were collected during three week-long visits to HHA from April 2015 to October 2016. The overall data collected included observations, interviews, document collection and field notes. The video recorded observations were of five 90-mins lessons and nine 50-mins lessons including three English, three science, three PE GCSE theory lessons, one PE GCSE practical lesson, two Geography, one information and technology, one design technology, and one mathematics lesson. In total over 15 h of observations were recorded and transcribed. We also observed two 20-mins language and literacy focussed assemblies, where the whole year group collected for an assembly and the focus was on language and communication. Interviews were conducted with the principal, the Deputy and Assistant Head, a learning support teacher, and the Language and Literacy Education Consultant. One pre- and one post-interview were conducted with every teacher that was observed. These interviews added up to at least 970-mins of interview data that was transcribed. Focus group interviews were held with five groups of three students immediately after the first set of observations (English, Science, PE, IT and Geography). A questionnaire about language and literacy was conducted with all 83 teachers in July 2016. In addition, a range of texts were collected, including copies of lesson plans, teaching material, student texts from a range of teachers, students and classes, and comprehensive field notes were made. Members of the research team visited the school on a regular basis collecting additional information, reporting to the Senior Leadership Team, and all staff. Papers discussing the findings from the wealth of data collected will be forthcoming.

Prior to the research team visiting the school, details of the aims of the project were shared with all staff, students and parents of students involved and informed consent was obtained. Ethics approval was obtained from the institutions, teachers, students and parents of students involved. The school approved the identification of the name of the school, and all involved were given access to the material collected.

In the present paper, we draw on the data collected in PE GCSE theory lessons as outlined in Table 1. During the three data collection visits, the following data were collected: video recordings of classroom observations, and interviews with two PE teachers and PE students. During the first visit, we interviewed the teachers who were observed before and after their lesson, and three students who had been in the lesson participated in a focus group interview immediately after the lesson. An overview of our schedule for the first visit is outlined in Appendix I. On our second and third visits, due to time, only classroom observations and post lesson interviews were conducted with the PE teachers. The three classroom observations took place in GCSE PE theory lessons involving one cohort of Year 10 (14–15yr old) and two cohorts of Y11 (15–16yr old) students, co-taught by two PE teachers – PE Teacher 1 (PE.T1) and PE Teacher 2 (PE.T2). The first PE classroom observation was a 90-min lesson and the second two observations were both a 50-min lesson. The topics covered were: body types, roles in sports and risk reduction measures. An outline of the initial questions for teachers and the focus group interview with students (see Appendix II) were sent to the teachers in advance and approved by our collaborators in the school. Naturally, as these were semi-structured interviews the questions varied and were contingent upon the interviewees' response. The post observation interview questions are not included as these varied dependent on the lesson and the observation notes. The observations and interviews were conducted in English, and video and audio were recorded and transcribed verbatim. The written texts from students in two cohorts were also collected. The first (April 2015) involved 20 texts discussing somatotypes (i.e. body types), and the second (April 2016) included the first and second draft on the topic of carbo-loading. The texts were

handwritten, and processed digitally in order to archive and conduct a text analysis. The students' written data was triangulated with the classroom observations and interviews in order to demonstrate how the explicit teaching of language within the PE lesson potentially impacts the students' written output.

Table 1

PE Data collected during three visits to HHA.

Time of visit	Interviews	Topic	Students' Texts
April 2015	1 post-lesson student focus group interview with 3 students 1 pre- and post-lesson teacher interviews	Body types	20 written texts (Somatotypes)
October 2015	1 post-lesson teacher interview	Roles in sport	–
April 2016	1 post-lesson teacher interview	Risk reduction measures	20 written texts (Carbo-loading; 10 first attempt texts, 10 s attempt texts)

3.3. Data analysis

The data collected were analysed manually, and key SFL metalinguistic terms emerged as points of interest, e.g. *genre*, *register*, *clause-complex*, *nominalisation*, *hyperTheme/hyperNew*, and *macroTheme/macroNew*. MacroTheme and MacroNew usually refer to the starting and summative point of a text such as a heading. However, as the students were responding to a question no heading was used, and the question could be seen as the macroNew. We focus on genre, register, nominalisation, hyperTheme and hyperNew, which are briefly defined and examples from the data are provided in Table 2.

Table 2

Metalinguistic features – definitions and examples.

SFL Metalinguistic Terms	Definitions	Examples
<i>Genre</i>	Model of context motivating language uses as “stage, goal-oriented social process” (Rose & Martin, 2012, p. 1)	When introducing the written assignment on “somatotypes” the teacher states that the question is asking for a “classificatory report...” PET1: What you are going to do is to read the questions and I want you to decide what genre you think you are gonna have to write it to answer these questions.
<i>Register</i>	Functional variety of language according to shifts in context of situation (Halliday & Matthiessen, 2014). Shifting in language use from an everyday towards an academic register (e.g., use of technical terms, changing verbs into nouns as abstract phenomena)	PET1: we've taught previously about register continuum so trying to select language that is more suitable PET2: Can we turn apart from into a more technical word?
<i>Clause-complex</i>	Combination of clauses that realise logically sequences of meaning in a text. Causal relations can be achieved through linking two clauses with adjuncts such as <i>because</i> , <i>since</i> , etc.	Student: except from PET2: Right, except is a great a great word. What's the nominalised word for except? The teacher discussed cause-and-effect clause structure, without explicitly using the term 'clause complex': PET1: when we're looking at explanations, we have the cause and effect . So the cause is high bowl in cricket; effect is it does give you a head concussion... So when you structure your sentences, you can vary that.
<i>Nominalisation</i>	“Down-ranking” of a clause into a nominal group, in that a “congruent” experience is realised as an “incongruent” or abstract phenomenon (Halliday & Matthiessen, 2014)	PET2: ... What's the nominalised word for except ? So, instead of saying to except, what could we say? Student: Exception (another student in the same group) PET2: What did we do with conclude and conclusion Student: We turned it from conclude to conclusion PET2: (nodding) so exception ...
<i>hyperTheme/New</i>	Organisation of text as the point of departure and the condensation of meaning respectively at the level of “rhetorical paragraphs” (Martin & Rose, 2007). Corresponding to traditional notions of “topic sentence” and “summary sentence”	PET1: A hyperTheme . What does the hyperTheme do? What does it have to do? Student: Introduce what you're talking about

The metalinguistic terms such as genre, register, macroTheme, hyperTheme, Theme, and nominalisation, along with other resources were pre-taught to the students before the observations took place. In the data collected, we were able to identify their use in the classroom. Such metalanguage was shared by teachers and learners across the curriculum in a range of disciplinary subjects. In addition, the term *genre* was reinforced through a curriculum genre map, found in a table that every student had access to in their student planner. This curriculum map presented the key genres found in the classroom, the generic stages, examples and subject areas where these genres are regularly found (see Coffin, Donohue, & North, 2009, p.260, for an example of a genre map). The curriculum map was adapted and developed by the Language and Literacy Education Consultant at HHA from the HLW course.

The data from the classroom interaction was directly related to features identified in the student texts. However, it should be noted that the relationship between the language in the classroom and the occurrence in the explicit text needs to be

investigated further in order to establish a direct correlation. Such investigation could perhaps draw on think aloud protocols or stimulated recall methodology, which is beyond the scope of the present study. However, it is possible to identify that the metalinguistic features outlined in Table 2 were explicitly used by the teachers and students, and evident in the manually coded transcriptions from the classroom and interview data. In addition, on the whole these linguistic resources – nominalisation (see Christie & Derewianka, 2008), clause-complex (see Halliday & Matthiessen, 2014) and hyperTheme, i.e., higher level periodicity (see Martin & Rose, 2007) – were identifiable in many of the student texts.

As pointed out by Christie and Derewianka (2008) metalinguistic resources which focus on language, clause and discourse semantic features provide a scaffold for a shift in the register from the everyday to academic language. Disciplinary knowledge is often realised in technical terminology (e.g., *somatotypes*) or nominalised phenomena as abstraction (e.g. *risk reduction*). Academic register is often valued as it is seen to be more formal, technical or “objective”, something which also influences grammatical intricacy (Eggins, 2004) in that complex clauses can be simplified, or simple clauses can be made more complex reflecting a shift from more spoken-like language use towards the written mode or vice versa. From a textual perspective, the written mode requires student writers to organise information in terms of higher level Theme and New information. Theme is a metalinguistic term used to refer to the point of departure of a message (Halliday & Matthiessen, 2014). Martin and Rose (2007) refer to Theme as a term to understand the predictive nature of a text (macroTheme), a section/paragraph (hyperTheme, commonly referred to as topic sentence), and a clause (Theme). Students were introduced to Theme, through deconstructing and analysing texts and encouraged to organise their own texts using macroTheme, hyperTheme and Theme within the PE lesson and other disciplines. The identification of the above features in students’ texts illustrates how students had acquired the discourse strategies from the PE classroom and from other areas across the curriculum due to the whole school approach to language and literacy. As pointed out by the OFSTED inspection:

Following staff training and support delivered by your senior leaders, all teachers now focus on technical subject language, use of key terms and improving pupils’ reasoning and explanations. Following a successful pilot in humanities and PE, where achievement improved as a result, this approach is now used by all teachers and progress is improving for all pupils currently in the academy.

(OFSTED, 2016)

The collected classroom and pre- and post-interview data were manually analysed and annotated in order to identify and investigate the use of the explicit teaching of language for curriculum learning. The following categories were identified:

- **Using metalanguage** – identifies the particular metalinguistic resource used in the classroom and interviews, e.g., in class PE.T2 explicitly used the term *nominalisation* with the students, when asking students to think about changing a word, e.g. from *except* to *exception*.
- **Discussing metalanguage** – identifies the particular metalinguistic resource that was discussed reflexively in the classroom and interviews, e.g. where PE.T1 reflected on the effects of teaching nominalisation: e.g., “*we looked at nominalisation and tried to make it sound more academic and, I feel like it’s helping quite a lot*” (PE.T1 interview April 2015).
- **Benefits/impact on teachers and learners** – when either the teacher or learner can explicitly associate how the focus on language supports teaching and learning, e.g., in an interview PE.T1 stated that register *empowers [students]... in terms of their ability to... get across their meanings in a very clear and technical way*.

Where appropriate the data was double coded, e.g., “*we looked at nominalisation and tried to make it sound more academic and, I feel like it’s helping quite a lot*” – was double coded as it discussed metalanguage and also highlighted the benefits/impact on the teachers and learners. These identified categories and their relevant examples from classroom interactions, interviews and students’ written output will be further examined in the following section.

4. Findings

The present study demonstrates that the explicit teaching of language, informed by SFL, had a valuable impact on both teachers and learners. The teachers’ knowledge of the disciplinary language and literacy requirements of PE improved tremendously. There was a paradigm shift in pedagogy firstly through the use of the TLC as a guide for lesson planning, and secondly in the fact that teachers now incorporate and explicitly teach language for curriculum learning. Moreover, students and teachers now have an explicit focus on language, and a shared metalanguage they can draw upon in the PE classroom and beyond. They are equipped with tools that enabled them to talk about texts and the language found in the GCSE PE written exam. Ultimately, the students’ GCSE PE results indicate a marked improvement in their performance (see Table 5). The findings are further explained and discussed in detail by referring to data from the interviews, classroom observation transcripts and the analysis of students’ written texts.

4.1. Using explicit metalanguage: impact on teacher

This section focuses on the positive impact on the teacher and the conscious awareness raising of the teachers who now firmly believe in explicitly teaching the language for curriculum learning and using metalanguage to scaffold and develop

learning in the classroom. The explicit teaching of language and use of metalanguage reflects the development in the teachers' understanding of disciplinary literacy which is incorporated into their pedagogic practices.

The explicit teaching of language within classroom interaction elucidates disciplinary knowledge, and the requirements of the curriculum and exam for both teachers and students. The PE lessons were planned adopting Rothery's (1994) TLC. The four stages of the TLC include:

- (1) Setting the Context, in which teachers and students explore the target knowledge, e.g. background knowledge, review previous related relevant knowledge, key concepts, etc.;
- (2) Modelling and Deconstruction, where an exemplar text is introduced to the students. The teacher deconstructs the text with the students, identifying the genre of the text, i.e., the goal, staging/organisation and social purpose of the text, the intended audience (the who – tenor), the key ideas constructed in the text (the what – field), and the organisation (the how – mode), and where necessary key lexicogrammatical (lexis and grammatical) features;
- (3) Joint Construction, here the teachers and students co-construct a text and the teacher provides scaffolding for students; and
- (4) Independent Construction, where students write texts independently.

The TLC with the four stages provides a pedagogical framework, which lends itself to the explicit teaching of language for curriculum learning, and also provides a meta-pedagogy that is shared within PE and across the curriculum at HHA. The TLC provides a clear structure where teachers and students understand the progression of the class, as well as the roles and responsibility of both teachers and students throughout each stage (Rothery, 1994, p. 103).

The teachers used the TLC structure their lesson plans and scaffold the design of the lesson. For example, PE.T1 and PE.T2 introduced the language features of a six-mark response, which requires students to produce essay-type writing in their PE examination. They further divided the stage into multiple “mini” teaching and learning cycles, as illustrated in Figure 2:

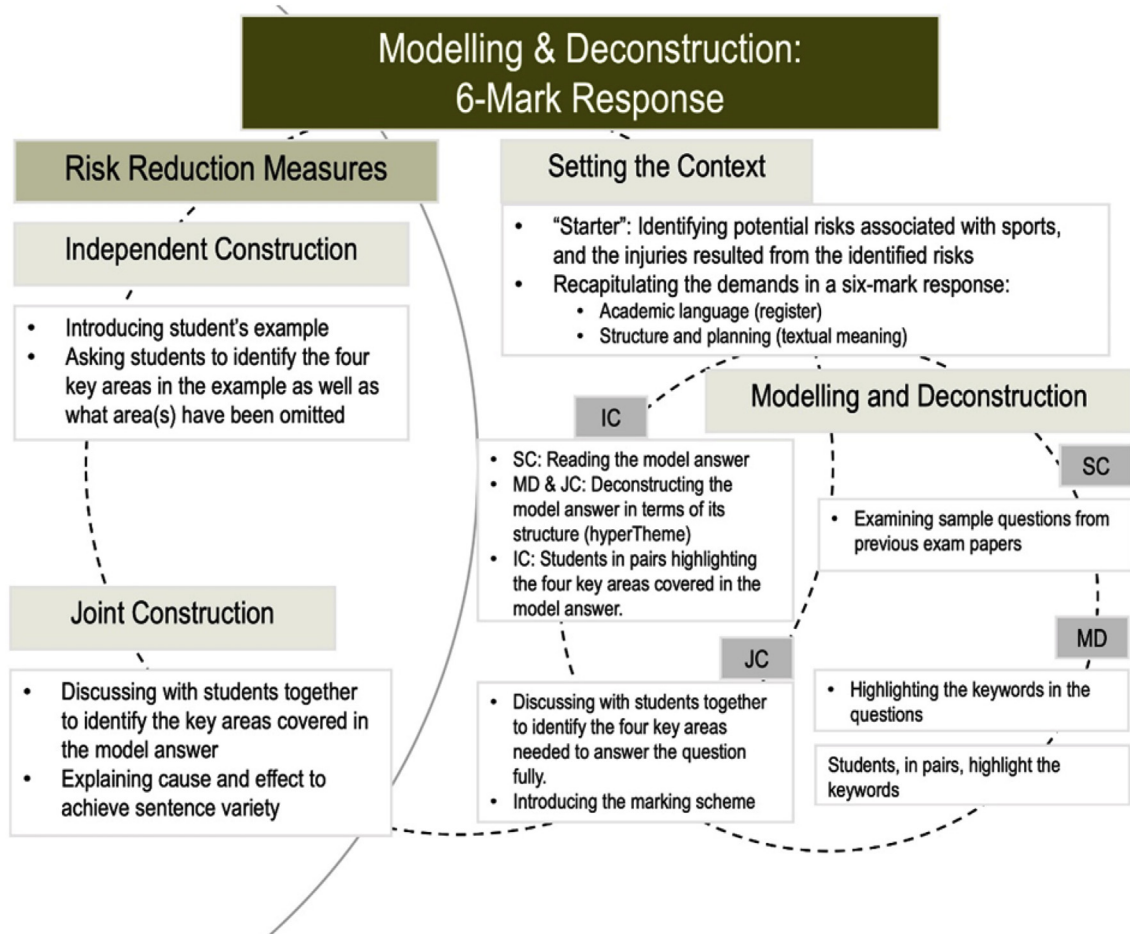


Figure 2. Mini-cycles within the Modelling and Deconstruction stage: answering a six-mark response related to risk reduction measures.

In the lesson as illustrated in Figure 2, PE.T1 sets the context by building the field, identifying the potential risks and injuries of different sports. The deconstruction of the content and language supports the students when responding to similar six-mark questions. A six-mark question is the highest scoring item in the written GCSE exam (Department for Education, 2015). Students are expected to write a detailed answer where the language of the response may not necessarily be assessed for spelling, punctuation and accuracy; however, the complexity of the response may impact the grading criteria. In order to move from building the field to modelling and deconstruction, PE.T1 reviewed some of the linguistic demands required by a six-mark question, which had previously been introduced to the students. After reviewing the linguistic demands with PE.T2 drawing from a model text, which the teacher had written himself, the teacher modelled and deconstructed the knowledge and language required in this six-mark question.

For example, during the Modelling and Deconstruction Stage, the teacher sets up an activity where students identify and highlight the key points required in the question, and the corresponding responses found in the model text, stated as *you will highlight ... identify ones they've missed out*, as outlined in the quotation:

- (1) So you will **highlight** the four keys at the top in the four different colours. You're gonna read through that answer and try to **identify** which of those four, if any, if included, and **identify** which ones they've been missed out. And once you've done that in your pairs, we'll want you to **jointly construct** and have a go and try to make that response a little bit better, by making sure you include the ones that haven't originally been put in. We'll give you a few minutes to do that, and then we're gonna take your ideas back in and see if we can jointly construct a better answer for this particular question. (PE.T2, Reading Task, 3rd visit, 29 April 2016)

At this point, students working in pairs are involved in discussing, identifying and highlighting (physically with highlighter pens provided by the teacher; see Figure 3) the key lexicogrammatical features in the question and response. The teachers' and students' roles and expectations were made explicit, and the students' attention was directed to the language, by identifying the cohesion between question and response; and improving the model text (Fortune, 2005). The students demonstrated knowledge and the ability to apply previously taught discourse analytical tools to identify and highlight with marker pens features such as hyperTheme, nominalisation, etc. As a class, they discussed the opening (the hyperTheme) of the response and other lexicogrammatical and discourse semantic features (see Figure 6). The class moved on to a joint construction phase where they initially worked in pairs to construct a draft text, before coming together as a class to jointly construct a text. PE.T2 explicitly informed the students that the subsequent activity would be to "jointly construct" an improved response. The task was facilitated by the use of a shared metalanguage and meta-pedagogy between the teacher and students.

4.1.1. Examples from modelling and deconstruction

Teaching knowledge about language establishes connections between the PE subject content and language. For example, PE.T1 explained the concept of *risk reduction measures* in terms of general-specific classification:

- (2) And if we say **pads and a helmet**, which are classified as a risk reduction measure, what is it? What are all of those things... what do they fall under? Clothing equipment... protecting... **protective clothing or equipment** is the risk reduction measure you identify for a batter in cricket. (PE.T1 April 2016)

In his explanation, PE.T1 connected the specific terms "pads" and "helmet" to "risk reduction measure", and introduced the general category "protective clothing or equipment". This explanation provided a resource for students to package the specific entities into an abstract category, preparing them for reading and identifying features in the texts. In Example 3, PE.T2 provided support to a student making a shift towards the academic register from a more spoken-like expression when a student reads aloud their text they've constructed with their partner:

- (3) A student reads aloud
 Student: To minimise injuries in boxing the athlete would need to have their gum shield in so they don't lose any teeth.
 PET2: If you **lose teeth**... what could you maybe change that to make it sound more academic?
 Student: **Tooth loss.**
 PET2: **Tooth loss** OK. Yeah.

(PE.T2, April 2016)

The students were previously informed of the requirements of achieving full marks in the written response, such as the use of "academic language". They were also taught how to use nominalisation to make writing more academic. In this instance, the student understood the requirement for nominalising "lose teeth" as "tooth loss" following the teacher's prompt ("to make it sound more academic"). We discuss this example and nominalisation in more detail later in the paper. To sum up, explicitly using metalanguage and teaching language for curriculum enables language that makes meaning in the discipline visible.

4.2. Teachers and learners discussing metalanguage/explicit teaching of language

It is relevant to add that the explicit teaching of language for curriculum learning was a cognitive construct that both teachers and learners could discuss and reflect on, thus demonstrating a conscious level of knowledge about language in the PE classroom and beyond.

4.2.1. Teachers discussing the teaching of language in the PE classroom

The potential advantages of the explicit teaching of language for curriculum learning in the PE lesson can be further demonstrated in the teachers' interview. In response to the effectiveness of focusing on language in the classroom, as shown in Examples 4 and 5, PE.T1 affirmed that the explicit teaching of language provided benefits to his current teaching practice, as well as helping his students deconstruct and understand complex written and spoken tasks:

- (4) Teaching [language] explicitly really brings them to the level that you would like them to do without making any blocks to your current practice. It doesn't slow the lesson down, it's not adding things on top, it comes with it. It carries the subject content at the same time. (PE.T1, October 2015)
- (5) I've spent more time trying to find good examples of model texts, and trying to use more focused reading activities where pupils are exploring the subject knowledge by exploring pieces of writing, starting to move towards... technical written pieces in PE... to scaffold them towards technical spoken language as well. It's quite important in physical education for them to start speaking, analysing orally as well. (PE.T1, April 2016)

In Example 6, PE.T1 outlines the benefit of a focus on language for curriculum learning and the practicality of planning lessons using the TLC. He adds that the TLC has changed his pedagogy in the practical lessons of PE as it allows him to talk about action when modelling a physical practice verbally, e.g., a cricket stroke:

- (6) I find it particularly practical in the lesson... there're lots of mini cycles... break[ing] that down into mini-cycles of showing that particular element of that skill of performance, modelling it, going through it together... Before they're doing it independently, they're still going through the same process, I think the PE teachers will... offer a model [by showing videos...]. (PE.T1, April 2015)

In addition, both PE.T1 and PE.T2 suggested that the explicit teaching of language in the PE classroom enhances the students' understanding of the language requirements of PE written tasks, as shown in Examples 7 and 8:

- (7) I've done bits of focusing specifically on language. We looked at nominalisation and tried to make it sound more academic. But I feel like it's helping quite a lot... getting pupils to understand what they need to be writing... how to write it... (PE.T2 April 2016)
- (8) In terms of written answers, they were more coherent... there's still some work to do obviously, but they've got more understanding of what each part of the sentence, the clause... functions to do... we are talking about the purpose of the language, and trying to structure that academic language into their writing. (PE.T1, April 2016)

The PE teachers' reflections highlight improvements in students' classroom performance, including an enhanced understanding of the roles of language in constructing subject knowledge, and in meeting the task requirements in preparation for the GCSE examination. In the next section, the impact on the students and the students' writing development is further explicated.

4.2.2. Students' discussing the teaching of language in the PE classroom

The three students who participated in the focus group interview immediately after the PE theory lesson we observed (April 2015) were generally positive towards the explicit teaching of language in the PE classroom. While the general comments on the explicit teaching of language were positive, the students were less certain about the teaching of more complex linguistic knowledge. For example as shown in Example 9, students understood the use of higher-level Theme and New for structural purposes; however, the purpose of nominalisation was found more difficult to comprehend.

- (9)
- | | |
|--------------|---|
| Researcher 1 | So when you are talking to somebody else or when your teacher talks to you and they say work on your nominalisation, do you find that useful? |
| Student 1 | Um.... Not really. [EMBARRASSED LAUGHTER] |
| Researcher 2 | Oh. Not really. How about working on your themes, macro-theme and hyper-theme? |
| Student 2 | In the sense yes because it points, it is like a straight point to what I need to work on but in the same sense... I don't know how exactly I need to correct it or improve on it. |
| Researcher 1 | Alright. So you mean you know the structural level but not in the language itself? |
| Students | Yeah.
(Student focus group interview, April 2015) |

Generally, the students agreed that they had become more aware of language choice in their writing, and the connections between such choice and content knowledge, including physical activities taught in the lessons:

- (10)
- | | |
|-----------|---|
| Student 1 | It is like we are always trying to relate it back to like certain terms [the teacher] would use during physical activities, he will relate it back to the written word of what we are doing. So was it last term we were doing ... |
| Students | Fartlek training. Fartlek continuous training. |
| Student 1 | And it's all put back into written words... and see which different types of training that we will need to help us to like with certain somatotypes that we may have like for different sports and so forth. And body types and sports and how does it help.
(Student focus group interview, April 2015) |

In addition, the students also recognised the teachers' clarity in explaining the abstract concepts using both language and visual aids (e.g. colour-coded worksheets, photographs and videos), as shown in Example 11:

- (11) [PE. T1] is more visual so he tries to give more examples visually instead of some teachers just give us a lot of sheets and then just expect us to get along with it, but without the help and support and without anything on the whiteboard... [O]n the board he shows it instead of just saying it, so it allows us more thinking and he explains more details, so we actually understand. (Student 3, April 2015)

One of the visual resources used is colour coding when the students are deconstructing texts. As shown in Figure 3, the students, as discourse analysts, colour-code linguistic resources such as periodicity and development in the model text. This cognitive activity fosters their ability to identify, analyse and visualise patterns in the language. As a student from an EAL background (Jamaica) reflected:

- (12) When you colour code [the words]... it kind of like helps you to structure the word for you and for yourself so when it comes to the exam it basically mentally coloured it and formed it that way so it helps. (Student 1, focus group interview, April 2015)

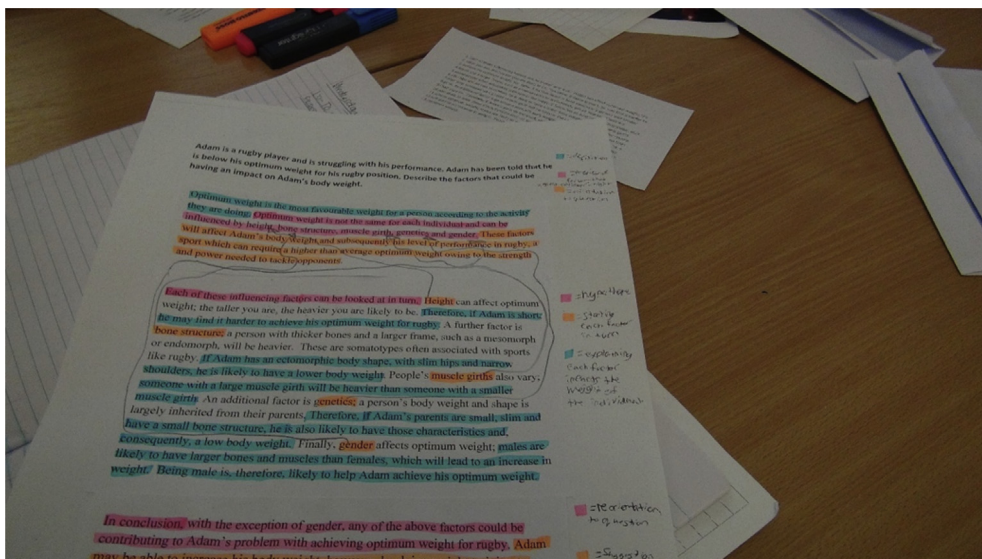


Figure 3. In-class reading task with text structure and key content colour-coded. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

This mental visualisation of language may explain the more unconscious, instead of uncertain, understanding of the subject knowledge. Student 1 agreed that the focus on the explicit teaching of language helped him to see “things in different ways”, illustrating perhaps a certain shift in metacognitive awareness in relation to language. The above students' reflections show that the teachers' scaffolding in the classroom enabled learners to talk and write about PE knowledge through language. The literacy support provided by the teachers raised their awareness of the differences between everyday and academic registers, and increased their confidence in performing better in examinations.

4.3. Benefits/impact on teachers and learners

The impact of introducing the explicit teaching of language in the PE classroom on students is evident in the students' writing in terms of their use of “academic language”, realised by features such as nominalisation and higher-level Themes and News. The textual evidence also corroborates the steady improvement in the GCSE PE results since the introduction of the HLW scheme. These three aspects are exemplified and discussed below.

4.3.1. The use of nominalisation and periodic structuring in six-mark responses

The two major linguistic and discursive features in the students' texts – nominalisation and periodic structuring – are examined in the present study. Nominalisation is an important process in scientific discourse for shifting from a more everyday, spoken-like language use to written, abstract, technical language. As illustrated in Figure 4, for example, the process “(to) lose teeth” is nominalised into “tooth loss”, where the verb “lose” becomes a noun “loss”, and “tooth” becomes a part of

the nominal group classifying “loss”. Through nominalisation, the specific, congruent experience is shifted towards a general, abstract phenomenon as a kind of “injury”, one of the focuses of “risk reduction measures”.

<i>To lose</i>	<i>teeth</i>
Process	Participant
<i>Tooth</i>	<i>loss</i>
Classifier	Head

Figure 4. Nominalising *to lose teeth* into *tooth loss*.

Nominalising congruent experience also provides options for students to organise the focus of their texts, which are organised through textual patterning, or what we call periodicity/periodic structuring. Periodicity enables us to understand the flow of information as a coherent (or incoherent) text. This is achieved by organising the discourse with macroThemes/News and hyperThemes/hyperNews. MacroThemes/hyperThemes, more traditionally labelled “introduction” or “topic sentence”, are the points of departure of the discourse in that they foreshadow the meanings realised in the text across the unfolding discourse (see [Martin & Rose, 2007](#)). MacroNew/hyperNew represent the “summary” or “conclusion” sections, in that they condense the meanings construed in the discourse. [Figure 5](#) demonstrates the periodic structuring of the introductory paragraph of an exemplary text written by the PE teacher. The teachers believed that writing a model text also helped the teacher understand the demands of the task. The hyperThemes and hyperNew are highlighted and out-dented:

<p>MacroTheme (introducing carbo-loading)</p> <p>HyperTheme¹</p> <p>Carbo-loading is a dietary plan with the purpose of increasing muscle glycogen stores...</p> <p>HyperTheme²</p> <p>The carbo-loading plan... can be divided into two stages.</p> <p style="padding-left: 40px;">The first stage of the carbo-loading plan aims to cause glycogen depletion within the muscle... The second stage of the carbo-loading plan aims to cause increased glycogen storage...</p> <p>HyperNew¹</p> <p>An athlete who follows this carbo-loading dietary plan will have significant increased amounts of glycogen stored in the muscles at the end of the week compared to the amounts they had at the beginning.</p>
--

Figure 5. Periodic structuring of the introduction paragraph of the model text.

The introductory paragraph, as shown in [Figure 5](#), is the MacroTheme as the point of departure of the whole text. The paragraph is further comprised of two layers of thematic patterning. The first hyperTheme introduces “carbo-loading as a dietary plan” and its purpose is elaborated in the paragraph. The second hyperTheme in the unfolding discourse previews the

“carbo-loading plan” which is divided and discussed in relation to the *two stages*. The paragraph is closed with a hyperNew, which summarises the result of following the plan (“significant increased amounts of glycogen stored in the muscles...”). The periodic structuring of the text therefore functions to signpost the focus of the text, in addition to organising the text into “waves” of information, which through predicting what is coming and what was said for the reader improves the flow of the text. The use of nominalisation and periodic structuring are key indicators in students’ texts showing their awareness of the shifts in academic register, and their ability to produce academically-valued texts.

The students’ awareness of register shift is demonstrated in the development of their texts between successive attempts. The students in the present study were required to independently construct a six-mark response in response to the following prompt: “Discuss the suitability of a 100 metre [*sic*] sprinter completing a carbo-loading dietary plan in order to improve performance”. They submitted two drafts of their response to this question, the examples of which from one student (EN) are presented in Table 3.

The two drafts were submitted respectively before and after the teachers explicitly taught the language of a six-mark response. This particular six-mark response can be classified as an exposition, or more specifically a challenge (Martin & Rose, 2007). Although the prompt suggested a “discussion”, a two-sided argumentation according to Martin and Rose (2007), the students instead had to argue against the suitability of a sprinter implementing a carbo-loading dietary plan. This position was developed earlier in the text, as the students were asked to describe the processes and purposes of carbo-loading, which suits an endurance athlete more than a sprinter. The complexity of the task was challenging for many students, as reflected in their first attempts (e.g., 1st draft). The extract is taken from the same student’s texts (EN) as shown in the 2nd draft, and represents the common response found in many other students’ written response. The student’s attempt to describe the stages of carbo-loading are presented in Table 3. The hyperTheme is highlighted through indentation, while the original spelling and formatting are retained.

Table 3

Extracts from first and second draft of a six-mark response on *carbo-loading* (Student EN).

1 st draft
A one hundred metre sprinter exercises at a high intensity for a short period of time as a result of this they will not use carbo-loading. This is because the body has natruul stores so glycogen is only needed for exercise that lasts for at lest ninty-minuetes which is why this method is mainly used by endurance athletes. The method of carbo-loading consists of two stages the first is when an athlete depletes as much glycogen as possible through going on long runs as well as this the athlete eats no carbohhydrates to ensure their muscles has no glycogen. The second part consists of no exercise and consuming large amounts of complexed carbohhydrates. [<i>sic</i>]
2 nd draft
HyperTheme Carbo-loading is split into two stages. the first consists of long durations of endurance exercise the reason for this is to deplete all their glycogen stores. During this time the athlete will have no carbohhydrates to deprive their body of glycogen. However, they will eat an increased amount of protein to help with the recovery of muscles. The second stage of the method’s function is to increase their glycogen levels to maximum potential. At this stage the athlete will either do interval training as it does not large amounts of require glycogen or no exercise at all this means very little no glycogen will be used. Also in contrast to the first part of the week the athlete will eat as much carbohhydrates as they can in the final days leading to their competion. [<i>sic</i>]

The second draft is both more organised and shows a more reflective scientific register than the first draft. In the 2nd Draft, there is an explicit signposting of what the text is about through the use of a hyperTheme. The hyperTheme introduces the field focus on “Carbo-loading” which is previewed as consisting of “two stages”. This provides a signpost where the reader expects the textual progression focusing on “the first [stage]”, followed as signalled by “the second stage”. Within each stage the student introduces technical knowledge, for example when describing “the first stage” the student writes “no carbo-hydrates to deprive the body of glycogen”.

Another indicator of progression is the construal of technical knowledge through nominalisation. A number of dynamic and congruent experiences construed in the first attempt are nominalised. One example is using a long nominal group with a technical term (“long duration of endurance exercise”) to replace a general term with an embedded clause (“exercise that lasts for at least 90 minutes”). Such long nominal groups (e.g., “an increased amount of protein, the final days leading to their compet[it]ion”) and technical terminology (e.g., “interval training, recovery of muscles”) are commonly found in the second draft as the text is carefully planned to incorporate more knowledge of the field. Such expansion of the text is also marked by the elaboration of the functions or purpose of each stage. The cause-and-effect connections between the diet (cause) and its purpose (effect) are established through non-finite clauses (e.g., “to + infinitive” clauses. e.g., “to deprive their body of glycogen”) or logical metaphors (nominalising cause–effect relations, e.g., “the reason for this”), which is described in more concrete terms in the 1st draft, as contrasted in Table 4. For example, in the 1st draft “an athlete depletes as much glycogen as possible” the athlete is seen as the agent doing the depletion, compared to the non-finite clause in the 2nd draft “to deplete all their glycogen stores”. The 1st and 2nd Drafts demonstrate how a student distanced himself/herself from the more common-sense, spoken-like expressions and moved towards the abstract and technical construal of written PE knowledge.

Table 4

Incongruent construal of cause–effect relations in the second attempt.

	1 st Draft	2 nd Draft
Non-finite clause	the first [stage] is <u>when an athlete depletes as much glycogen as possible</u> through going on long runs	During this time the athlete will [eat] no carbohydrates <u>to deprive their body of glycogen</u>
Logical metaphor	<u>This is because</u> the body has natural stores	<u>the reason for this</u> is to deplete all their glycogen stores

This suggests that intervening and explicitly teaching language for curriculum learning can improve the presentation of knowledge for examination assessments. The teacher's focus on language raised the students' awareness of the difference between everyday and academic language through the introduction of concepts such as register, nominalisation and periodicity. The evidence is also reflected in the overall GCSE results for PE, as reported in Table 5.

4.3.2. Improvements in the students' written texts and the GCSE PE results

The positive impact of the explicit teaching of language in the PE subject are indicated in the GCSE results at HHA. PE has seen a marked and steady improvement from 2013 to 2016 since the introduction of “How Language Works”. The GCSE results across the four cohorts, in comparison with the GCSE national average from 2011 to 2016 (Stubbs, n.d.), are shown in Table 5 (provided by the school):

Table 5

GCSE Results of Physical Education at HHA from 2013 to 2016.

Grade	2011	2012	2013	2014	2015	2016	2017
	Before a focus on language		After a focus on explicitly teaching language				
A*/A	Not available	Not available	6%	10%	35%	19%	19%
National average	20.8%	21.1%	20.4%	19.9%	20.0%	18.2%	16%
A* – C	14%	35%	61%	80%	85%	75% ^a	95%
National average	71.0%	70.9%	70.9%	69.7%	70.1%	68.4%	67%

^a These cohorts were slightly weaker than previous cohorts and all students gained grades that were higher than their predicted grade.

As illustrated in Table 5, in 2011 and 2012, the pass rate for the school was 14% and 35%. The below average results in 2012 and earlier in GCSE PE, along with other subjects in the school, were identified as areas in need of improvement. The school had tried a number of different professional development routes aimed at improvement, but this eclectic approach to PD seemed to have had little if any impact. In September 2012, there was a whole school focus on language and literacy across the curriculum, teachers started to attend the How Language Works programme, and new initiatives such as the explicit teaching of language for curriculum learning were introduced. The dramatic increase in students' GCSE PE marks started in 2013. From 2011 to 2017, the assessment criteria remained constant (see Oxford Cambridge and RSA, 2018). Since 2014, the pass rate has been above 75% and higher than the national average of approximately 70%. In 2017, the results for GCSE PE A*–C were 90% (the national average was 67%), and the A*/A were again above the national average.

A sustained whole school approach, where the explicit teaching of language within the discipline was reinforced across the school, was the only change to the curriculum throughout this period of time; and can be seen as one of the major influencing factors. The student population remained stable with no major changes; for example the number students from EAL and disadvantaged backgrounds remained comparable from 2011 until now. As summed up by PE.T1:

- (13) *It became apparent to us [wide range of teachers in the school] that without teaching it [language] explicitly they [students] weren't necessarily adopting the type of language that they're going to need to use in an academic setting. And in the past teachers may have felt that was going to be tackled in English, then we could just teach our subject, we can teach them the sports and the knowledge behind that. We found that that wasn't enough, pupils weren't using scientific sporting language, they weren't using the type of language that you need for a GCSE and beyond, because it may not have been modelled to them. (PE. T1, March 2015)*

The PE teacher identified the need for a whole school focus on language and literacy and his, along with other disciplinary teachers, responsibility to explicitly teach and model disciplinary literacy. In another interview PE.T1 highlighted that the teachers knew that their students were capable students, but they were underperforming in the GCSE exam and students who were predicted an A or A* were not achieving the predicted grade. Predicted grades are based on the results from mock GCSE examinations prior to the student sitting the GCSE exam. Since introducing the explicit teaching of language within the

PE class, the percentage of the HHA students obtaining grade A or above in GCSE PE from 2013 to 2016 increased from 6% to 19%. The PE teachers believed that this improvement in performance resulted from the explicit focus on teaching language for curriculum learning.

The benefits of providing language support across disciplines also extended to other exam results. From 2014 to 2016, the overall GCSE results, as [Table 6](#) illustrates, improved among all students at HHA, whilst at the same time the student population remained stable and comparable in background and ability to previous years.

Table 6

Overall GCSE Results at HHA (including English and Mathematics) from 2014 to 2016.

School Results 5 A* - C		2014	2015	2016
A* - C	All students	44%	56%	62%
A* - C	First Language – English	48%	56%	64%
A* - C	First Language – Other	42%	56%	61%

As shown in [Table 6](#), the percentage of all students obtaining grades A* - C in five subjects including English and Mathematics increased steadily from 44% in 2014 to 62% in 2016. Such improvements involved both students whose first language is English and students who use English as an additional language (EAL). OFSTED recognised this in the school inspection conducted in 2016; an OFSTED inspector evaluated the student performance in GCSE as “exceptional”, and the inspection report stated:

Academy leaders have implemented an approach to improving language development across the academy. Following staff training and support delivered by senior leaders, all teachers now focus on technical subject language, use of key terms and improving pupils' reasoning and explanations. Following a successful pilot in humanities and PE, where achievement improved as a result, this approach is now used by all teachers and progress is improving for all pupils currently in the academy.

(OFSTED, 2016, p. 2)

The GCSE results and the OFSTED inspection report both point out that one of the major influences for the success was the implementation of the explicit teaching of language across disciplinary areas, including PE, where students had struggled with their verbal and written responses. Informed by the SFL and genre based pedagogy, teachers provide linguistic resources to students to understand and construct disciplinary meanings. As shown in the present study, the students improved their disciplinary literacy, and their ability to identify and use technical, abstract academic language, and became better able to construct coherent written responses through effective textual patterning.

5. Conclusion

The impact of the explicit teaching of language for curriculum learning has had a positive impact on learner outcomes in PE and other subject areas at Hamstead Hall Academy. The benefits of introducing a whole school approach to language and literacy through a systemic functional linguistic model of language, and the explicit teaching of language are immediate and long lasting, as reflected in the classroom observations and the students' written responses. The benefit for teachers is that the explicit teaching of language enables teachers to clarify and make visible the task requirements, to share a common analytical tool, to discuss the language and structure of the texts, and to provide a diagnostic tool for assessment and feedback which positively impacts teaching and learning. The benefit for students is that the explicit teaching of language enhances their understanding of how changes in context influence the choice of language, i.e., shifting from everyday language to technical, academic language. Thus, this creates a cognisant shift towards a previously unfamiliar academic register and for learners a greater familiarity with the intricacies of language, specifically discipline-specific terminology, use of nominalisation and more carefully planned written discourses through textual patterning. The advantages of an SFL informed explicit teaching of language is demonstrated through examples from classroom interactions; reflections of teachers and students in the interviews; and students' improved written texts. The explicit teaching of how language works is paramount and can lead to improvement in GCSE results within PE and potentially other subjects. Before 2018, the weighting for the GCSE PE was 60% for examined performance/practical assessment and 40% examined written theory. From 2018, the new curriculum has changed to 60% theory and 40% practical. In the practical assessment, 30% is practical and 10% is based on performance analysis, i.e., often an oral explanation for a performance (www.gov.uk). From 2018, the ability to present a convincing written/spoken argument will have even higher stakes in GCSE PE and the explicit teaching of language for curriculum learning may have even greater implications.

In addition, as many teachers pointed out in the interviews, the tools used to deconstruct language and meaning are valuable resources that will benefit the students beyond school. The improvements in grades are encouraging, and have important implications for both understanding the inseparable link between language and knowledge, and informing effective pedagogies. Further research is in progress, which examines and reports the explicit teaching of language through

the use of TLC in other subjects, and the value and impact of PD for teachers that explicitly teach language for curriculum learning.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.esp.2019.01.001>.

Appendix I. Research visit to Hamstead Hall Academy, April, 2015

	Monday 27th April	Tuesday 28th April	Wednesday 29th April	Thursday 30 th April	Friday 1st May
Staff briefing 8.35–8.45 Registration 8.45–9.05	Introduction to whole staff Meet teachers to be interviewed & observed	Observation of assembly	Whole staff extended Teaching and Learning briefing to be led by EngT/Deputy Head & Gail Forey Registration will start at 8.55	Department briefing Maths? Science? English? Observation of assembly	
P1 9.05–10.15	Welcome and orientation including tour of the school.	Interview pupils	Interview -Deputy Head of School CPD & EngT/Assistant Head of School Language and Learning	Visit Grestone Academy (Primary school) Head of School	Interview - IT Students Focus Group discussion with 3 Pupils x 15mins
P2 10.15–11.30	Interview Executive Principal & other appropriate members of Senior Leadership Team (SLT)	Pre meeting with Teacher Lesson observation Yr9 Science SciT (Room 206) Post Meeting – Teacher Focus Group discussion with 3 Pupils x 15mins	Pre meeting with Teacher Lesson observation Yr10 GCSE PE (Room 014) PE T1 & PE T2 Post Meeting – Teacher Focus Group discussion with 3 Pupils x15mins	Pre meeting with Teacher Lesson observation Yr7 Geography GeoT (Room 533) Post Meeting – Teacher Focus Group discussion with 3 Pupils x 15mins	Interview SciT
11.30–11.45 P3 11.45–13.00	BREAK Pre meeting with Teacher Lesson observation Yr7 English EngT (Room 503) Post Meeting – Teacher Focus Group discussion with 3 Pupils x 15mins		Interview IT T	Interview PE T1 & PE T2	Share some initial thoughts Farewell – Head of School & Research Team in school
13.00–13.50 P4 14.00–15.15	LUNCH Interview EngT	Interview Language and Literacy Education Consultant	Interview pupils	Lesson observation Yr12 IT IT T (Room 212) Staff CPD meeting 3.30–4.30	
After school	SLT meeting 3.30				

Appendix II. Interview Questions

Initial Questions: Semi-Structured Pre Observation Interview with Teachers (around 20 min)

Rationale	Sample questions
To establish implementation of LAC PD in school	How was the explicit teaching of language for curriculum learning (LCL) PD implemented at your school? What did you find particularly helpful? What was confusing or less helpful? To what extent did the PD help you to address student needs? What can be done to ensure that PD in LCL leads to meaningful results in student performance in your school?
To establish teacher's views about the PD offered to teachers in the PD workshops	What impact has your LCL PD had on you as a teacher? What is leading to improved results?
To assess how the teacher perceives the focus on language and how he/she uses the teacher learning cycle as a model in their current classroom practice	What have you learned in your LCL PD training? How has this informed your teaching in the classroom?
To contextualise teacher's proposed sample video lesson in terms of their views on PD and language focus for classroom teaching	How are the materials and the activities you currently use in your lesson shaped by your understanding of how language works in your subject? What impact do you intend this to have on an individual student's learning?
To understand the support offered for LAC PD in school	What support have you had to help you improve the way you teach your subject? Have you had enough support to enable you to teach your subject effectively? Based on what you learnt in the PD on LCL, what works well for you? And why? What didn't work so well for you? Are there any particular areas that you feel you need more support with?
To establish school's top (max. 5) priorities and where PD fits with this	To what extent has the PD in LCL you've received influence your students' achievement?
To review the overall implementation	If LCL PD were introduced again from the start, would you do things differently? Is there anything that could be done to improve results?

Initial Questions: Semi-Structured Focus Group Interview with Students (around 15 min)

3 students in each group

Interviews to be conducted immediately after video lesson

Rationale	Sample questions
To establish individual views on teaching and learning in the classroom	What do you like best about your lesson?
To establish individual views on language focus on teaching materials in the classroom	What do you like/dislike about the today's class? Does your teacher help you understand how language works differently in this subject compared with others? If yes, how? How does your teacher help you write well in this class? Do you feel you have enough support with writing well? What impact do you think this had on your learning?
To establish individual views on language focused teaching activities in the classroom	What do you like/dislike about the (x) activities your teacher used in class today? What impact do you think this had on your learning?

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