

How can developing subject literacy enable pupils to enhance their subject knowledge and the understanding of key concepts in Geography?

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ABSTRACT

In the Geography and Literacy connection, National Geographic Education online edition, Christina Riska (2013) asks the question 'What do you think of when you hear the word literacy? Depending on what you teach, chances are geography is not the first thought that comes to mind. But believe it or not, geography and literacy naturally share many similarities. In addition, you can deepen student's learning in both Geography and literacy when they are integrated in the curriculum.' This paper considers through action research how developing subject literacy in secondary school geography lessons can enhance pupil's subject knowledge and the understanding of key concepts in Geography.

INTRODUCTION

Geography has a very specific language; I intended to research the strategies that I could incorporate into my teaching practice. This would enable me to demonstrate that by using this language (with a particular

focus on tropical storms), pupils would improve their understanding of key specific concepts in geography.

Graham Butt (2005) says, 'It is important to appreciate the significance of both language and literacy in the development of geographical thinking'

KEYWORDS

SUBJECT LITERACY

SUBJECT KNOWLEDGE

GEOGRAPHY

STRATEGIES

TEACHER'S ACTIONS

and links this to Christine Counsell's view on subject discipline: 'A subject, or discipline, is a way of working with certain kinds of information in order to answer certain kinds of questions. A subject is not 'information'; it is knowledge' (Counsell 2000). Thus, we should strive to understand the

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links between language, literacy and knowledge creation in geography as a precursor to promoting effective geography education. It is clear to me that I need to understand how to develop the geographical thinking of all of the pupils to whom I teach geography.

The strategies used included: keywords, video, reading of articles, writing frames, sentence starters and word fill tasks. To examine their effectiveness, I compared test scores from the first and second term (pre- and post-research test scores), reviewed lesson assessments, talked with teachers and pupils, and marked pupils' work. As Alex Quigley writes on closing the vocabulary gap, 'There is a need to shift our thinking from seeing vocabulary, or indeed literacy more broadly, as a generic tool that we can apply in every classroom in the same way. When we do this, it is likely that we will see a shift in our pupils' thinking and learning'. (Quigley 2018).

LITERATURE REVIEW

An important issue to consider in relation to teacher language is the use of technical subject terminology. Every subject has its own vocabulary and the subject teacher has a responsibility to think about this (Capel et al. 2016). The text goes on to say that a teacher should think in detail about how and when to introduce subject-specific terminology. Expectations of high-quality writing and high-quality extended writing differ when a pupil is writing in specific subjects. There are several key concepts in geography that, in order for them to be understood, require pupils to know and learn keywords; pupils should be able to describe these concepts using the keywords expected. Techniques need to be developed to be able to eventually produce extended pieces, although it may be argued (Butt 2005) that many GCSE and AS/As2 examinations demand short answer responses while the extended writing expected from assessed coursework in geography has steadily declined over the years.

I have reflected on the justification for

taking the stance that improving subject literacy can improve subject knowledge and understanding of key concepts. I have looked at several case studies. These include Dolan's 'Geoliteracy: an approach to enquiry-based learning for Junior Cycle Geography students in Ireland'. The article report suggests, 'Geoliteracy, with its explicit emphasis on oral and language skill development, can make an invaluable contribution to the development of both geographical concepts and literacy' (Dolan 2019). It helped me evaluate how I could further develop this research question as it highlights a difference between content literacy, that is students learning from geographic texts, and disciplinary literacy where the central focus is on developing geographical enquiry and geographical concept knowledge whilst enchanting students' literacy and numeracy (numeracy was not a focus of my research enquiry). It also mentions that geo-literacy shows pupils how to look for information and critique it and offers another way of looking at literacy, geography and pedagogy.

I have also been influenced by Comber's (2017) research paper, 'Literacy, geography and pedagogy: imagining translocal research alliances for educational justice'. The focus of Comber's research is to explore the relationship between geography, literacy, pedagogy and poverty; exploring this in my research would have developed my enquiry question. The research case study explores the question, 'why geography, literacy and pedagogy relates to children's fundamental rights to education wherever they are born and grow up' (Comber 2017). It thus takes a different angle on literacy and geography, advocating the need to move beyond just copying, cutting, pasting and recitation to the important work of literacy studies internationally and looking at literacy in a global context. Working together can bring tangible positive results. 'Teacher-researchers like Wells, Stromboli, and Grant consistently demonstrate what is possible and have designed durable

enabling pedagogies of place helping young people to assemble the literate practices to become cosmopolitan citizens' (Comber 2017).

PEDAGOGY

Alexander writes that teaching is a blend of a number of elements. Pedagogy is the act of teaching together with the ideas, values and beliefs by which that act is formed, sustained and justified' (Alexander 2008). Alexander says that there is a relationship with language and thought, linking cognitive development with the language that children have experienced. 'Language and thought are intimately related, and the extent and manner of children's cognitive development depends to a considerable degree on the forms and context of language which they have encountered and used. 'When children learn language,' argues Michae 'they are not simply engaging in one type of learning among many; rather, they are learning the foundations of learning itself' (Alexander 2008). 'Social constructivist theories of learning suggest that children learn best in social situations, where their use of language is central in the process of acquiring new concepts. Therefore, within the context of geography teaching, the use of language and development of literacy are central to the pupil's ability to cope with increasing cognitive demands, the creation of new understanding and the order of thoughts (Butt 2005).

Reflection and critical thinking are considered the foundation of teacher development. Critical thinking takes into consideration many factors as well as theories that are necessary to evaluate and enable pupils during their learning so they make the required progression. Reflection is looking at why we do things, how we do things, interpreting and understanding what works, what doesn't, listening to pupils and expert teachers and using all of this knowledge to improve lessons and lesson planning. This type of reflection helps to improve performance as a teacher and benefits students in their learning.

POSITIONALITY

The influences that shape teachers' lives and that move teachers' actions are rarely found in research studies, policy reform proposals or institutional mission statements. They are more likely to be found in a complex web of formative memories and experiences. We remember the teachers we have loved and hated, and we imitate those that we admire (Brookfield 1995). It can be argued that as a trainee teacher in today's classroom climate your positionality is also influenced by policy reforms and the ethos of the school that you are in.

In Brookfield's theory of critical reflection there are four lenses of reflection, these are; the students perspective, colleagues perspective and experiences, theoretical literature and the the autobiographical lens of self reflection. In the autobiographical lens of self reflection I have a responsibility to teach pupils to value hard work and know it is rewarding. It is important for us as teachers that we are able to show perseverance, even when it is difficult, so that pupils can learn from this and feel encouraged to persevere themselves when their own work is difficult. Planning well-structured, engaging lessons enables pupils of all abilities and backgrounds to meet expectations for the use of a high standard of subject literacy. This links to the importance of language use. That is planning for being able to distinguish language and tone, thus demonstrating as well as explaining differences, which is intrinsic in developing pupils as learners.

From Black & William's (1998) Inside the black box: raising standards through classroom assessment it is clear to see how assessment can impact learning: 'A recognition of the profound influence that assessment has on the motivation and self-esteem of pupils both of which are crucial influences on learning; the need for pupils to be able to assess themselves and understand how to improve' It is important to develop through reflection:

'such reflection involves, of course drawing on the range of strategies and techniques one has at one's disposal, or developing new ones: but it does so selectively, flexibly and strategically' (Hammersley 1999).

CONTEXT

I conducted this research, as part of my PGCE in Geography, at a secondary school in inner London. This is an all-through school with pupils aged 4–16. It is a large school and the secondary curriculum is broad and balanced, with a wide selection of GCSE and other option subjects available in Year 10 and 11. Pupils' abilities range from low to high; there are a large number of English as an additional language (EAL) and special educational needs (SEN) pupils. 70% of pupils are boys and 30% girls. The school implements Progress 8, aiming to capture the progress pupils make from the end of primary school to the end of secondary school.

This research enquiry involved a Year 8 class; the Figure 1 pie chart shows the range of target grades of pupils, from 6+ to 9, and the percentage of pupils in each target grade. I had to be aware of this data so that I could differentiate with appropriate resources for each pupil (Source school data).

THE ACTION RESEARCH ENQUIRY

'How can developing subject literacy enable pupils to enhance their subject knowledge and the understanding of key concepts in Geography?'

METHODOLOGY

1. Providing staff with an outline copy of the research proposal.
2. The quantitative research involved analysing pupil's school data and researching pre- and post-vocabulary test scores, and extended writing tasks.
3. The qualitative research involved the creation of a Geography department questionnaire.
4. Example question, 'What do you think it means for pupils to be literate in Geography?' One member of the Geography department mentioned, 'To be able to use geographic terminology to express their understanding. This would also entail making decisions or reasoning using Geography related concepts.'
5. Observing lessons given by other teachers in the Geography department and the strategies that they used.
6. Conducting assessments on Geography vocabulary pre and post and using recall at the beginning of lesson to check for understanding of vocabulary that pupils had learnt in previous lessons.

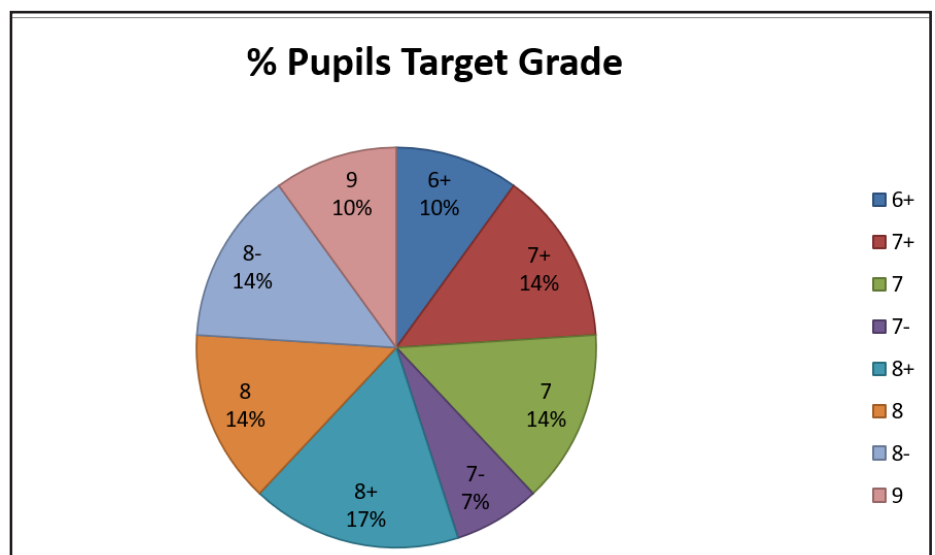
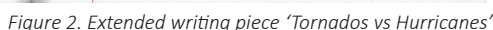


Figure 1. Range of target grades of pupils



- I. Identifying opportunities for collecting data.
- II. Taking photographs of pupil's work. Created card-sorting tasks for class group discussion, organised information to enable pupils to understand and learn new words and conducted class discussions.
- III. A series of literacy tasks tailored to extend, develop, challenge and grow vocabulary, speaking and writing skills.
- IV. Developed pupil's ability to use connectives to describe and explain social, economic and environmental impacts of tropical storms. Then developing their ability to gather geographical data and make sense of it. This led to them making progress in evaluating and explaining what the secondary effects of tropical storms would be (see Figure 2).
- V. The use of writing frames with various levels of support based on ability, as well as video clips and practice questions to extend the writing technique.

Ch 10 Recap 22/1/19

BINGO CARD

Debris	Hurricane <i>Cyclone</i>	Trade <i>Winds</i>
Fujita ✓ <i>Scale</i>	Coriolis <i>Force</i>	Mathew
Cyclone ✓	Famata	Environmental <i>economic impact</i>

Social	Economic	Environmental
<ul style="list-style-type: none"> - Land was used for agriculture destroyed 30 - In 2016 only 200,000 all platforms - people came back to live - Insurance companies - Racial slurs were - U.S. sent towards - Africans - Fish died - 25% water was pumped 	<ul style="list-style-type: none"> - Reparations costed \$105 billion - Forest land cost \$5 billion - Jobs were destroyed 	<ul style="list-style-type: none"> - 80% of the city was flooded - Storm caused a lot of erosion - Above production of water had to be pumped - New Orleans was one of

Ch 10 Compare tropical storms Thurs 31st Jan 2019 / 19

in a LIC and HIC.

(1)

Social	Economic	Environmental
<ul style="list-style-type: none"> ➢ More than 1000 people were killed ➢ 14 million people affected and many left homeless 	<ul style="list-style-type: none"> ➢ The overall economic impact is estimated at 5-8 billion dollars ➢ 36 million lost source of income 	<ul style="list-style-type: none"> ➢ Major roads were blocked by trees ➢ Strong winds caused storm waves

In Thinking Skills Bingo (Figure 3), pupils were given a bingo card, shown 15 words on the whiteboard, and asked to select nine of them and write them in their bingo card. I would then read definitions, and if a pupil had the word that matched that definition the pupil would tick the card. The first pupils to match nine words with the correct definitions would then say bingo. Initially I had asked them to create the table in their books and found that it took some time to do this, so when I did it in another lesson I gave them a ready-made bingo card template. It did take a while to understand and I had to go over my explanation and change how I explained the process to make it easier to understand.

Post-research assessment (Figure 4) showed an increase in the number of pupils achieving between 60–69% and 70–79%.

The proportion of pupils achieving 60–69% was 26% in term 1; this increased to 42% in the end-of-term assessments.

My evaluation showed that focus on subject literacy does develop subject knowledge.

Figure 3. Thinking Skills bingo

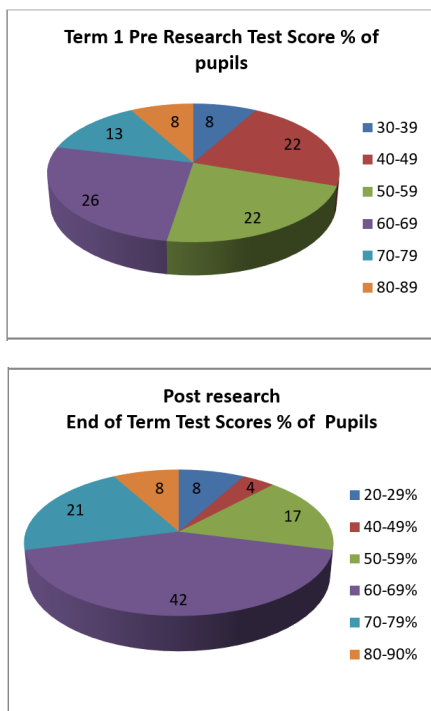


Figure 4. Pre- and post-research test comparison

However, a few pupils' scores went down (Figure 5). I did talk to these pupils about this will seek to address what was happening in the next term.

DISCUSSION

The focus of this research enquiry is to support the development of subject literacy to enhance subject knowledge and the understanding of key concepts in geography. It supports research in this area and the development of how supporting subject literacy can help pupils' vocabulary, extended written skills dialogue and independent learning. This research has shown me what happens when you focus on an idea in a particular way. Whilst it gave me focus on developing subject literacy, a criticism is that it did not focus enough on other areas in geography such as map reading, graphs, and numeracy and geography investigations. As geography is a subject that requires many levels of knowledge and skills, focusing too closely on one area may be of detriment to another. Other areas of geography are as important, e.g. making links to other subjects such as history and science and learning outside the classroom. Whilst it is important for pupils to be subject literate, on reflection

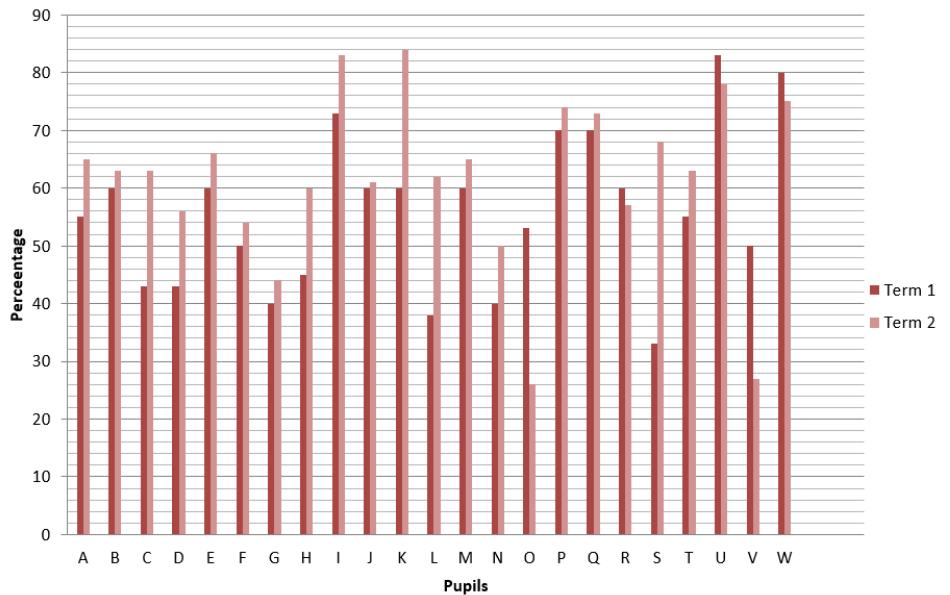


Figure 5: Comparison bar chart showing how each pupil ('A'-'W') performed in term 1 and term 2

developing subject literacy requires a broader focus to ensure that pupils of all abilities remain engaged. One of the pupils, who performed less well in term 2 seemed to be more creative, and perhaps more of a focus on how to engage with pupils creatively could have resulted in a better performance.

A continuous cycle of critical reflection can enable me to plan improvements in my practice as well as developing research skills and working with experienced colleagues. I started teaching in a school in September and this research enquiry took place in this school, which was my first placement. The feedback from teacher observations had been to focus on consistency and exploring pedagogy methods, produce differentiated resources and create strategies to do so. Pupils taught by me in my first placement have made some progress and I aim to continue to explore ways to adapt teaching to respond to the strengths of all pupils. I have joined teacher research networks and subject-specialist networks, to consider new perspectives and try new strategies and ideas.

Further targets are to revise my research and look for further examples and case studies to apply knowledge and learning and extend this idea. I aim to explore subject literacy applying other aspects such as numeracy, geographical enquiry

and engaging other subjects that are on the curriculum and have a close link with geography. I find as I work collaboratively that my teaching practice improves, and I view it as essential to participate in group research projects with a focus on this area to create new knowledge useful to my practice as well as other practitioners. This can ensure a better understanding of the classroom environment and the different dynamics at play. I found that as I focus more on critical reflection, theory and teaching strategies my pedagogical skills improve and this is something that needs continuous attention so that I am able to integrate theory and practice and relate it to the geography curriculum, assessment and professional learning.

Additional targets for continued development include: reviewing the resources I use and why, how to ascertain that all pupils of all levels are making progress and that I am having a positive impact. Adapt teaching in order to meet the dynamics of different classes, developing resources for SEN and EAL pupils and getting to know pupils as individuals enabling me to break down tasks into small steps and stages, ensuring activities are interesting and within their capabilities. How can other methods establish if pupils have grasped concepts? How would it be best to work with colleagues to seek feedback and respond

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to that feedback? Working with peers to develop teaching strategies that avoid misconceptions and misunderstandings does ensure the improvement of the quality of learning.

CONCLUSION

The focus of this enquiry is to support the development of subject literacy to enhance subject knowledge and understanding of key concepts in geography. It supports research in this area and the development of how supporting subject literacy can help pupils' vocabulary, extend written skills dialogue and independent learning. As geography is a subject that requires many levels of knowledge and skills, focusing too closely on one area may be of detriment to another. Other areas of geography are as important, e.g. making links to other subjects such as history and science, and learning outside the classroom. Whilst it is important for pupils to be subject literate, on reflection developing subject literacy requires a broader focus to ensure pupils of all abilities remain engaged. The purpose of studying geography is that it offers pupils scope to learn key concepts such as place, scale, interdependence and environmental interaction. Pupils begin to know and learn about the challenges that we are facing now and in the future, and it encourages a critical thought process on the role that they can play. It enhances communication, interpretation and critical thinking skills on how to use technology to collect, analyse, interpret and communicate a range of data in a variety of ways. All of which are founded in a high level of subject literacy. ■

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