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Someone else's shoes: A case study exploring how an extended role-play can support year 8 students' learning about malaria in Mozambique

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Abstract

This study explores how role-play can be taken beyond the standard format of a one lesson debate and used as a framework for a sequence of lessons, through an extended role-play. This is a pedagogical device where the students are given a character at the start of a unit, and remain in this character throughout the sequence of lessons. Lesson activities are centred on developing the character in the imaginary context of a rural village in Mozambique. Based at a school in Suffolk, the results of this investigation show that the students are able to understand complex ideas about who is most affected by malaria, the prevention and control of malaria and who is most responsible for controlling the spread of malaria. This is attributed to the collaborative and discussion based nature of the lessons, as well as the characterisation that the extended role-play provides.

Introduction

“If you continue to pollute the Earth with your fast cars, I will lose my home forever. My children will not know where they come from... and we don’t want to live in a zoo!”

An impassioned Polar Bear shared his feelings with a family from the United States, who were defending their elaborate lifestyles. Other members of the audience included some penguins from Antarctica, Inuit people from the Arctic Circle and politicians from a variety of countries. Rather than describing the scene from a fantastical novel, I am in fact recounting a lesson with a year 8 class, in which various parties were discussing the impacts of climate change on their lives. It was during this lesson that I realised the power of assigning a character to a student, and saw how invigorating an experience it was for some students to be able to debate and discuss an issue from a given point of view, other than their own. Allocating characters meant that there was a wealth of opinions and views in the room, rather than a peer-pressure enhanced consensus.

Whilst there are some benefits to the standard format of role-plays in geography, there are some downsides too. In my experience of observing and teaching using role-plays throughout my PGCE year, I have noticed several common features to role-play within geography: the role-play tends to only last one lesson, including time to prepare the argument; students are given generic character briefs in groups of two or three, and there is little encouragement to personalise, bond with or empathise with the characters the students are representing; during the discussion, the room is dominated by the most vocal students, and the others sit at the side, often not engaging with the action.

I wanted to investigate ways in which the strengths of characterisation could be harnessed to enhance students’ geographical understanding of a topic, without falling prey to the pitfalls outlined above. After discussions with history teachers and reading of literature surrounding role-plays, I came across the concept of the extended role-play. This is a teaching device whereby students are assigned their own personal character at the start of a sequence of lessons, and remain as that character throughout the sequence. During the lessons, some activities involve thinking in character; others require the student to think as themselves. This device is particularly suited to history, as the nature of the topic often involves teaching events occurring over a time period, so students can imagine the changes and impacts each event will have on their character’s life. The

benefits to this are that the student can develop a more detailed understanding of the issue being discussed (Worth, 2011) and start to empathise with their character.

The challenge was now working out how to apply the concept of an extended role-play to geography. Whilst there are some geographical topics that involve a series of events taking place over time (for example conflict or disaster relief management), a lot of topics taught at Key Stage 3 are not easily dissected into different character groupings, where each group has a different opinion about an issue, and for it to be enough material to spread over an entire sequence of lessons. The year 8 class I was to teach for this research had been studying climate change prior to the start of this investigation, and I wanted to choose a topic that was tangentially related to this. As one of the impacts of climate change is that higher temperatures have led to an increase in cases of malaria (due to warmer temperatures creating favourable breeding conditions for mosquitoes, vectors for malaria), I decided to write this lesson sequence based on malaria.

This is a particularly suitable topic for an extended role-play, as with many issues associated with the geographies of health and disease, there are multiple stakeholders involved. I chose to base the role-play in Mozambique because it has a high rate of malaria, and it has worked closely with the World Health Organisation (WHO) in order to combat the disease. As the class was relatively small (having only 23 students), I chose to have five groups of characters, with four or five individual characters in each group. I would also give each character a name, to aid personalisation of the character. Whilst it was important to have a range of characters that would have different roles and opinions throughout the lesson sequence, I wanted to make sure the residents of the country were adequately represented, rather than turning the entire role-play into a debate about which outside agency would most adequately 'solve' the problem. Therefore three of the groups would be Mozambique residents (two groups of farmers and the government) and two would be outside agencies (the WHO and the non-governmental organisation [NGO], NothingButNets.net).

This research was carried out in an 11 - 18 converter academy in Suffolk, with a year 8 class of 23 12-13 year old students. In the UK, this period of education beginning when a student starts secondary school at age 11 and lasting two or three years, is known as Key Stage 3 (KS3). This school has an accelerated, two year KS3. As part of their KS3 geography education, the class had previously been studying climate change, and this enquiry sequence was taught as a standalone, tangential unit before returning to the climate change module.

In this investigation, I seek to answer the following research questions:

1. How can role-play in lessons support geographical learning?
2. What should Key Stage 3 (KS3) students learn about malaria?
3. How did students' understanding of malaria develop over the enquiry sequence?
4. How did student attitudes to role-play progress over six lessons?
5. How did an extended role-play assist students' understandings of malaria?

I begin with an examination of the literature surrounding health and disease in education, and explore how this relates to the current national curriculum in geography. I then give an overview of the literature to consider how role-play can support geographical learning, with an explanation of how an extended role-play will be used in this investigation. Next, I outline the research design and give an overview of the lesson sequence. Finally, I discuss the results of the investigation where I examine: first, how the students' understanding of malaria developed over the lesson sequence; second, how the student attitudes to role-play progressed over the six lessons and third, how the role-play assisted students' understandings of malaria. I conclude by summarising the findings and implications for future practice, particularly in light of the new curriculum.

Literature Review

In this section, I will introduce the idea of health and disease as a topic within geography, and discuss the place of this within school geography. I will then go on to examine the relevant pedagogy in for this topic before addressing the following research questions:

What should KS3 students learn about malaria?

How can an extended role-play in lessons support geographical learning?

Geographies of Health and Disease in Education

The geographies of health can be studied in a variety of ways. One is to study the spatial distribution of disease, and question the reasons why and how disease occurs in some areas and not

others. Another consideration of health within geography is to examine the impact of the environment (e.g. cholera in developing countries) or human behaviour (e.g. HIV/AIDS) on the distribution and transmission of disease. A further concern of geography with health is the human response to health challenges. For example, debates as to whether governments should educate their citizens about the risk of disease transmission and/or provide medicines to treat diseases or allow third parties to make profits on these endeavours are well-placed within the study of geography (Cowling & Digby, 2010).

The recognition of health within geography is not widely considered in schools for pre-16 students (Cowling & Digby, 2010). Even at post-16, only exam board AQA offers an optional module within its geography A-level dedicated to the study of global patterns of health. This module also includes the study of specific infectious and non-communicable diseases, contrasting healthcare approaches in different countries, and a focus on local and national healthcare provision within the UK. Edexcel offers a 'Pollution and risk to human health' option within their compulsory research module; however, the emphasis is on one specific human cause of health issues (pollution), rather than the spatial distribution of health. WJEC and OCR do not offer discrete modules on health and disease, however health services and provision are considered within other units, focusing on challenges facing rural communities (WJEC) and the social and economic impacts of urban change (OCR).

At KS3, there is currently no detailed content specification as to what students should learn about health issues (this is likely to change in September 2014, see 'Implications for future practice'). As the curriculum stands, health and disease can be effectively taught within its conceptual framework, as this provides useful opportunities for spatial analysis of disease, and an examination of the human issues surrounding disease incidence. There are a variety of websites and tools that can be used to achieve this, thus incorporating an element of geographical information systems (GIS) into the topic (Lyon, 2009). Other teaching methods can also be used to engage the students, for example: staging a mock 'World Health Summit' to debate tuberculosis, or imagining a deadly virus was threatening to spread to the UK and preparing a plan of action (Lyon, 2009). By using contemporary case studies and relating the global issues of health and disease to the students' lives, this can be a valuable inclusion to geography at KS3 (Lyon, 2009).

Whilst I have focused primarily on the considerations of disease within the UK geography curriculum, it is also useful to explore how educating about disease is approached within other countries. Cheong, Treagust, Kyeleve & Oh (2010) examine students' conceptual understandings of malaria in Brunei. Although Brunei has officially been declared free of malaria, the recent resurgence of malaria in Southeast Asia means that students are still educated about malaria, as schools play an important part in educating students about disease prevention and control (Cheong et al., 2010). Although the emphasis on malaria education in UK geography has a different focus to Brunei, this study still provides useful insights into the misconceptions about malaria that are held by students.

In Brunei, malaria is taught as part of the Biology AS and A-Level course. Students are expected to describe the causes of malaria, explain its transmission, assess the impact worldwide, discuss issues relating to prevention and control of the disease and discuss the reasons why vaccination has not yet eradicated malaria (Cheong et al., 2010). This is more detail than students at KS3 would be expected to learn, but this provides a useful starting point to work out what KS3 students should be expected to know within a geography module. Through an examination of literature, Cheong et al. (2010) identified several alternative conceptions related to malaria. They then used these to develop and refine a two-tier diagnostic malaria test, designed to test student understandings of malaria. Whilst the students surveyed in Cheong et al.'s work were older than the students in this study (15-19 years old and 21 years old compared to 12-13 years old), it is useful to identify misconceptions that older students have, in order to pre-empt them in this unit of work.

To explore the pedagogy employed whilst teaching about these topics, I discuss Herrick (2010) and Del Casino Jr's (2004) experiences of teaching university level courses on the geographies of health. Rather than focusing solely on the content of these courses (Del Casino Jr's undergraduate course is about HIV/AIDS in Thailand and Herrick's is a Master's module entitled 'Health, Lifestyle and Cities'), they detail the wider theoretical perspectives needed to successfully teach these units. Whilst the age of their students is much older than the KS3 students I will be teaching in this investigation, their perspective is still valuable to see which issues arise in older students.

Herrick (2010) is a lecturer at King's College London, and she examines the role of pedagogical practice in producing knowledge about health within geography. Her study is centred on literature discussing the potentiality of critical geography and she seeks to examine practical methods of

adopting a critical pedagogy in her lessons. In order to assess her students' change in understanding (and thus implicating the impacts of her critical pedagogy) Herrick measures her students' definitions of health before and after her university module by using concept maps. She does this twice over two years. However, in the first year she completed this, Herrick did not ask the students to complete the concept map about health with reference to a specific place or country. She acknowledges that this made it harder for the students to complete the task at the end of the year, as they did not have enough structure to frame their answers and adequately display their knowledge. This could imply that their final definitions of health as expressed on the concept map (particularly in the first year of her study) did not serve to adequately display the full range of student knowledge.

Despite these methodological limitations with regard to assessing her students' knowledge, Herrick (2010) manages to address the idea of applying practical pedagogical tools within a critical pedagogy. Employing a critical pedagogy in the classroom aspires to 'negotiate and transform the relationship between classroom teaching, the production of knowledge, the institutional structures of the school and the social and material relationships of the wider community, society and nation-state' (McLaren, 1999, p454). Indeed, teaching about the geography of health 'demands attention to the uneven, economic, social and power relations that pattern inequitable health incomes' (Herrick, 2010, p347), however the issue of how to get these broader issues into the classroom is widely under-documented (Herrick, 2010).

Throughout her course, Herrick taught about the wider issues relating to health, particularly employing discussion within her classes. Before and after the course, she asked the students (28 in 2008 and 14 in 2009) to define 'health' and complete a concept map around ideas relating to health. She then analysed these definitions and concept maps regarding their content, form and conceptual changes. After analysis, Herrick acknowledges that introducing these themes via discussion was a success in pedagogical terms, but fell short due to the opinions about health and healthcare provision that the students brought to the classroom. As the students in Herrick's class were from a variety of countries (UK, US, Canada, Japan, Nigeria and Brazil amongst others), they each brought their own cultural expectations and bias relating to health, which remained the strongest factor in shaping their opinions about health. As all the students in this study are from the same cultural background (white, British), it could be seen that they may have similar cultural expectations and

bias relating to healthcare, which, as with Herrick's course, manifest themselves in various ways throughout the lessons.

Another theoretical perspective to consider when discussing the geographies of health is the consideration of scale. Del Casino Jr (2004) details how he included different scales when teaching about HIV/AIDS epidemic in Thailand, and how this helped students 'think 'through' and not just 'with' scales of analysis' (2004, p344). Del Casino Jr uses methods such as providing students with a map of the national incidence rate of HIV/AIDS in Thailand, and encourages them to think critically about what this map shows. Through lengthy discussions and guided questions, he challenges students' preconceptions and allows the students to build up a more complex picture of regional divisions, and how this relates to health issues. He then uses his own research subject 'Ton' as an example of an individual with HIV/AIDS in the northern regions of Thailand, and once again, through guided discussions, allows students to ask critical questions about Ton's life and social status and how these impact on his experience with HIV.

Del Casino Jr (2004) emphasises the importance of knowledge about place in order to fully understand the health issues in a particular country or region. Within the knowledge about place at a national scale, he devotes time to exploring the social, cultural and economic areas emerge as regions. He then moves this to a local and personal scale by using Ton as a case study. Whilst Del Casino Jr seems convinced that this approach works for his undergraduate students, he does not provide information as to how many students he is working with. Whilst he provides a strong case for the consideration of place and scale within the study of health, his pedagogical tools (guided group discussion) suggest that he is working with a smaller group of students than would normally be found in a secondary school class.

As I have now addressed the place of health within geography and considered some pedagogical tools in which these issues were taught in the context of university course, I move now to examine how role-play can be used to support geographical learning, and assess the suitability of this pedagogy for geographies of health at KS3.

How can role-play in lessons support geographical learning?

Role-play is used in a variety of different subjects, and the literature surrounding role-play reflects this. Role-play was a favoured teaching method in the 1970s (Armstrong, 2003), and appears to

have been largely documented throughout the 1990s and early 2000s in a variety of subjects: drama, psychology (Britt, 1995), social sciences (Duveen & Solomon, 1994), philosophy, English literature (Wolf, Wright & Imhoff, 1994), foreign languages (Ladousse, 1987), environmental science, engineering, health sciences, business (Brown, 1994; Ergi, 1999), tourism and hospitality (Armstrong, 2003), ethics (Brown, 1994; Raisner, 1997), economics, marketing, political science, information technology (Kirkwood & Ross, 1997) and history (Luff, 2000).

Within geography, the literature involving role-play focuses on topics such as drought in Southern Europe (Palot, 2006), climate change (Usher, 2010), female membership of the Royal Geographical Society (Maddrell, 2007) and building a tourism resort in Rarotonga (Cutler & Hay, 2000). Maddrell (1994) has also written a 'how-to' guide for the effective use of role-play, and how this can lead to an emancipatory geography.

There are several approaches to role-play, as identified by Errington (1997). These are summarised in Table 1. Each of these approaches has a place within geography, particularly within the KS3 national curriculum for geography. For example, the curriculum states that students should '*develop 'geographical imaginations' of places*' (2007, p102), which role-play allows by giving students a role outside of their own locality. The curriculum also states that students should '*Appreciate how people's values and attitudes differ and may influence social, environmental, economic and political issues, and develop their own values and attitudes about such issues*' (2007, p103) which is suited to the features of an issues-based approach to role-play. This approach allows students to go one step further than merely appreciating the values on paper, and actually enact them. Due to the extended nature of this role-play, all four approaches can be seen within the sequence of lessons (see Table 1), with the main characteristics being drawn from the 'Issues-based approach' and 'Problem-based approach'.

Role-play has a unique place as a pedagogical tool in that it allows the creation of an emancipated geography (Maddrell, 1994; 2007). An emancipated geography is defined by Maddrell (1994, p160) as allowing 'invisible subjects to become visible', challenging gender, race and class stereotypes, challenging the hierarchy between student and teacher and raising students' participatory skills. Role-play allows ownership of a role, which can prove to be a liberating experience for shy students, particularly if given a role that holds power and responsibility (Cutler & Hay, 2000). They

are given a voice outside of their everyday persona, and an opportunity to speak out with the lower risk of expressing an opinion that is not their own.

| Approach | Typical features | Application in this study |
|----------------------------|--|--|
| Skills-based approach | <ul style="list-style-type: none"> • Students develop and practise a skill or ability and demonstrate it to others • Useful for specific tasks with clear assessment criteria • Suitable for practical skills which are hard to demonstrate theoretically | Whilst the aim of this role-play was not to develop a formal skill to be assessed at the end of the unit, the students developed their discussion skills throughout. This was an integral part of how the information was shared between students, as evidence was shared out according to which character they were assigned. |
| Issues-based approach | <ul style="list-style-type: none"> • Students explore the attitudes, beliefs and values surrounding an issue, and according to their role, take a position on the issue in a scenario • Useful for situations with alternative perspectives | The students discuss their character's different experiences with malaria and their attitudes towards malaria control in Mozambique. |
| Problem-based approach | <ul style="list-style-type: none"> • Students use own knowledge to deal with a series of challenges presented by the teacher • Useful for developing teamwork and decision-making skills | The students are presented with their character's different experiences with malaria (and the other characters, through discussion) and evaluate which is the best way to control malaria. |
| Speculative-based approach | <ul style="list-style-type: none"> • Students speculate on past, present or future events using real and simulated evidence • Useful for developing an argument and justifying conclusions | Using the evidence presented throughout the sequence of lessons (as well as their simulated experiences), the students assessed the most effective method of malaria control and who was most responsible for this control. |

Table 1: The four approaches to role-play and application within this study. Adapted from Errington (1997), as cited in Armstrong (2003, p.7).

Whilst role-play can allow a shift in social hierarchies amongst students, the hierarchy between student and teacher is also challenged through it. Teacher involvement can be very limited throughout a role-play, if sufficient preparation is undertaken and clear instructions given to students (Maddrell, 1994; Cutler & Hay, 2000; Armstrong, 2003). Limited teacher involvement proves empowering to all students, and provides a novelty factor to role-play, which can help keep students interested in the task (Palot, 2006) and sustain motivation throughout (Usher, 2010). The high level of discussion needed in role-play also improves students' negotiation and debating skills (Cutler & Hay, 2000). Through the students discovering and exploring an issue together, this can

also lead to a feeling of collective responsibility (Usher, 2010), particularly if students are studying something that is relevant to them, such as climate change.

Even if the topic is one situated outside of the realm of everyday life for students, role-play can allow a greater degree of empathy (Maddrell, 1994). Empathy is necessary because ‘it is about learning to see the alternative perspective – an empowering skill universally required by geographers’ (Maddrell, 1994, p160). Indeed, this is directly referred to in the national curriculum: ‘*appreciate how people’s values and attitudes differ*’ (2007, p103). Whilst role-play is not the only way in which empathy can be evoked within geography, the increased participatory nature of it can prove a powerful tool (Maddrell, 2007). As this role-play is set in Mozambique and involves very poor characters, this allows a large scope for empathy to be developed in students throughout.

Through adding a more personal element to a geographical topic, the scope and complexity of the topic could be extended (Maddrell, 2007). Topics that could prove difficult to teach at Key Stage 3 (such as the intricacies of power relations or political nature of interdependence and aid), can be accessed through the characterisation role-play provides (Cutler & Hay, 2000; Armstrong, 2003; Maddrell, 2007). Although these researchers based their findings on university undergraduate students, there is no suggestion that role-play would be no less effective at introducing further detail to topics at Key Stage 3. Usher (2010) allocated stakeholder positions to year 9 students to investigate whether London could make necessary changes to prevent climate change, and reports positive effects of doing so. Similarly, Worth (2011) used characterisation with low-attaining year 8 history students in order to engage them with the nuances of witchcraft in the seventeenth century. Rather than simplifying the details, she wrote an extended fiction piece (with students allocated different character roles within the story) to explain the diversity and causation within this topic. This also proved to be successful, shown by the high level of detail and accuracy in students’ extended essays at the end of the unit.

As detailed above, there are many benefits to using role-play within geography. Not only can it allow deeper exploration of topics through empathy and characterisation, it can also prove to have some empowering personal impacts, such as allowing quieter and shy members of a class to have a voice. However, ‘it is not unusual for their use to be limited to a once a year ‘treat’ which is often divorced from the rest of the course’ (Maddrell, 1994, p155). Indeed, the role-plays discussed in some of the literature here only lasted for one or two lessons (Cutler & Hay, 2000; Palot, 2006;

Maddrell, 2007). Usher (2010) used allocated stakeholder positions alongside class teaching, and students were encouraged to join in debates about climate change outside of lessons. However, he does not include specific details about how this element of his course supported his students' geographical learning. Worth (2011) gave her students characters which they kept throughout the whole history unit, but the characters were confined to reading out pre-scripted material.

I am therefore interested in exploring how role-play can be used as a starting point for an enquiry sequence, and how the benefits of role-play can be extended over a series of five lessons. Rather than including a one-off role-play within a sequence of lessons, the students were assigned a character at the start of the unit and remained in character throughout. In order to maximise the benefits of role-play, the students were given background information about their character, but will not be given scripts (unlike Worth, 2011).

What should KS3 students learn about malaria?

The current (pre-September 2014) Geography National Curriculum is structured around key themes, as well as providing guidance on content. Therefore, this provides schools with a large degree of flexibility as to which topics they choose to fit these criteria. Whilst there are changes to the curriculum currently in draft stages, I will discuss these later in 'Implications for further practice'. As there is no specified content to geographies of health and disease in education, I have undertaken reading in the fields of geographies of health, as well as research papers into malaria and have devised Table 2, relating concepts and content from the readings to each concept of the national curriculum. This provides a conceptual and content based outline to this unit of work. Also included in the table is how each of these concepts and content will be covered in the extended role-play written for this unit.

Following the table, I will outline the design of this research and provide an overview of the lesson sequence. I will then present my results and examine how students' understanding has developed, as well as the impact of role-play on their understanding, before discussing the implications this has for future practice.

| Link to KS3 National Curriculum (pre September 2014) | What should students learn about malaria and health? | How can this extended role-play support geographical learning? |
|--|--|---|
| <p><u>1.1 Place</u> <i>a. Understanding the physical and human characteristics of real places.</i> <i>b. Developing ‘geographical imaginations’ of places.</i></p> | <p>Students should be able to understand a country in order to fully appreciate the impacts of the disease on different localities within a region (Del Casino Jr, 2004)</p> <p>A broader understanding of cultural and economic geographies of a region allows students to understand more complex ideas about the impacts of disease on individuals (Del Casino Jr, 2004)</p> | <p>Students can imagine they are living in a particular area, and as they are acting as a character, engage on a more personal level with their geographical imagination.</p> |
| <p><u>1.2 Space</u> <i>a. Understanding the interactions between places and the networks created by flows of information, people and goods.</i> <i>b. Knowing where places and landscapes are located, why they are there, the patterns and distributions they create, how and why these are changing and the implications for people.</i></p> | <p>‘In a globalised world, the spread of infectious diseases ignores boundaries’ (Lyon, 2009, p68)</p> <p>Geography allows for the spatial understanding of risks associated with disease. When these risks are mapped ‘patterns and relationships emerge, questions arise and processes become clearer’ (Lyon, 2009, p68)</p> | <p>The groups that are associated with the global and national spread of malaria (Government, WHO and NothingButNets.net) will have the chance to analyse data and maps about the different scales of malaria incidence. Through the group work element, they will have a chance to share this information with the other group.</p> |
| <p><u>1.3 Scale</u> <i>a. Appreciating different scales – from personal and local to national, international and global.</i> <i>b. Making links between scales to develop understanding of geographical ideas.</i></p> | <p>Teaching on a variety of scales (e.g. national, regional and personal) allows students to connect broader theoretical ideas to the subject of health and disease (Del Casino Jr, 2004)</p> | <p>Having character groups that work on a variety of scales will allow students to see the different strategies that can be employed at local, national and international levels.</p> |
| <p><u>1.4 Interdependence</u> <i>a. Exploring the social, economic, environmental and political connections between places.</i> <i>b. Understanding the significance of interdependence in change, at all scales.</i></p> | <p>Health geography is frequently concerned with issues such as ‘inequality, social justice, uneven spatial outcomes and access’ (Herrick, 2010, p347)</p> <p>Malarious countries are ‘heavily dependent on resources from the more developed part of the world’ (Prothero, 2005)</p> | <p>Through the inclusion of two international organisations (NothingButNets.net and the World Health Organisation), the students will be able to see how Mozambique relies on funding and support from these outside agencies.</p> |
| <p><u>1.5 Physical and human processes</u> <i>a. Understanding how sequences of events and activities in the physical and human worlds lead to change in places, landscapes and societies.</i></p> | <p>‘Malaria is found in high countries that have high temperature, humidity and rainfall that promotes the survival of <i>Anopheles</i> mosquitoes and the malaria parasites’ (Cheong et al., 2010)</p> <p>‘Approximately 60% of all deaths from malaria occur among the poorest 20%’, although the relationship between the disease and poverty is not clear (Prothero, 2005, p184)</p> | <p>The role-play will be set in Mozambique, and the relationship between climate and mosquito breeding will be explored in the context setting aspect of the lessons.</p> <p>The inclusion of two groups of farmers (one slightly richer than the other) will allow these students to imagine and share the social and economic impacts of malaria.</p> |

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|---|---|---|
| <p><u>1.6 Environmental interaction and sustainable development</u> <i>a. Understanding that the physical and human dimensions of the environment are interrelated and together influence environmental change.</i> <i>b. Exploring sustainable development and its impact on environmental interaction and climate change.</i></p> | <p>When looking at ways to prevent or control malaria students should ‘understand that the harmful effects of DDT includes killing a variety of insects including beneficial insects and reduces the population of predator birds’ (Cheong et al., 2010)</p> <p>Climate change is exacerbating spread of malaria due to increases in temperature and precipitation (Prothero, 2005)</p> | <p>The students will examine the advantages and disadvantages of each method of preventing and controlling malaria. Different groups will be assigned different methods of how they are able to control malaria, and they will discuss these in groups.</p> <p>In the context-setting aspect of the lesson, the causes of increased cases of malaria will be examined, including the effect of climate change.</p> |
| <p><u>1.7 Cultural understanding and diversity</u> <i>a. Appreciating the differences and similarities between people, places, environments and cultures to inform their understanding of societies and economies.</i> <i>b. Appreciating how people’s values and attitudes differ and may influence social, environmental, economic and political issues, and developing their own values and attitudes about such issues.</i></p> | <p>The effects of malaria are ‘greatest among the poorest people who face direct economic costs[...] and social costs affecting household behaviour’ (Prothero, 2005, p184)</p> <p>An individual’s social and economic position will have a significant impact on how they perceive their disease and the effectiveness of projects designed to help them (Del Casino Jr, 2004)</p> <p>International aid projects may have the unintentional impact of overshadowing government initiatives, particularly if they have a high number of inexperienced volunteers and short term project objectives (Fulawka & Berry, 2010)</p> <p>Due to the high risk of infection, ‘foreign investment in mining, agriculture, manufacturing and in tourism may be limited in malarious areas’ (Prothero, 2005, p184)</p> | <p>The role-play will include groups from different socio-economic groups, both within and outside Mozambique. The students will work with characters outside their group, in order to get an idea of the different perspectives on a single issue.</p> <p>Each of the characters will be concerned with different social and economic impacts of malaria, and students use these to inform their in-character opinions during discussions.</p> |

Table 2: The links between the National Curriculum (pre September 2014), ideas about what students should learn about malaria at KS3 and how these ideas are being incorporated into this extended role-play.

Research Design

Methodology

This investigation takes the form of a case study. Case studies are used to investigate phenomena in context, where there is not a clear division between phenomena and context (Yin, 1994). This is

appropriate for a classroom environment, because all students are different and therefore will learn in multiple, context dependent ways. The case study method allows in-depth examination of learning within one specific educational context, thus providing a snapshot account of the phenomenon at one point in time (Jensen & Rodgers, 2001). The context in this investigation is a year 8 class of 23 students. They are pupils in an 11 – 18 converter academy in Suffolk, which has a two year Key Stage 3. The class had previously been studying climate change, and this enquiry sequence was taught as a standalone, tangential unit before returning to the climate change module.

There are several limitations to the case study method, which I will attempt to address in Table 3.

| Limitation of case study | Justification |
|---|--|
| [Case studies] are prone to problems of observer bias. (Nisbet & Watt 1984, cited in Cohen, Manion & Morrison, 2007, p256) | In order to limit the potential of personal bias, multiple sources of evidence will be considered (Yin, 1994). These are outlined in Table 4. |
| They are not easily open to cross-checking; hence they may be selective, biased, personal and subjective. (Nisbet & Watt, 1984, cited in Cohen et al. 2007, p256) | Whilst the nature of this study allows scope for personal reflection, these reflections are stated as such, and does not claim to represent all experiences. The multiple sources of evidence collected allow for claims to have more than one piece of supportive evidence. |
| The results may not be generalisable except where other readers/researchers see their application. (Nisbet & Watt 1984, cited in Cohen et al. 2007, p256) | This study does not claim to make generalisations; instead, I adopt a descriptive approach (Yin, 1994) to the development of understanding and attitudes of the students in this class. |

Table 3: Addressing the limitations of the case study methodology

Data collection methods

As mentioned above, the case study ‘relies on multiple sources of evidence, with data needing to converge in a triangulating fashion’ (Yin, 1994, p13). Therefore, it is necessary to collect data from a range of sources. These are detailed in Table 4.

| Data collection method | Use and justification | Evaluation of method |
|-------------------------------|--|--|
| Concept map | Students’ prior knowledge of the topic was assessed using concept maps. These were completed at the start of the unit by all 23 students, to gain an understanding of how much | Most of the students were able to connect the concepts; however, several students found it hard to label the links. This could suggest that the students knew that there was a link, but |

| | | |
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| | <p>the students knew about the topic. A list of key words was provided on the board for students to structure their concept maps, and they were encouraged to add explanations and extra words. I selected these key words as they relate to the overall themes of the entire lesson sequence.</p> | <p>found it difficult to articulate or even summarise what the link actually was. Given a smaller sample size, the researcher could have asked students why they have drawn a particular link (as some students may find it easier to verbalise their link, rather than writing it). However, despite the limitations of this method, it still provided a useful starting point from which to assess student progress.</p> |
| <p>Learning journal</p> | <p>At the end of each of the lessons, the students completed a learning journal entry at the back of their workbooks. This was in order to assess their progression throughout the unit, lesson by lesson.</p> | <p>Only ten out of the 23 students were in school for all six lessons of the sequence. Although the students that were absent caught up the work the lesson after, this rendered the learning journal process obsolete for these students, as I was not able to observe their progression of understanding over every lesson of the sequence. There was another issue with how I managed the completion of the learning journal throughout the lessons: the students had to fill them in at the end of every lesson, and in two lessons, they did not have more than five minutes to do this. Often this meant their responses were very brief. Also, the design of the questions often did not encourage students to elaborate on their learning, or monitor their progression of understanding from one lesson to the next.</p> |
| <p>Classwork</p> | <p>The students completed the work for this unit in workbooks, so I could collect these in and look at the work in more detail after they had finished the investigation. I also checked their workbooks throughout the sequence of lessons. Extracts of student classwork can be found in the Results section.</p> | <p>As a lot of the tasks were discussion-based, and I sought to encourage debate amongst students, this meant that the written quality of the work was often not a detailed or accurate reflection of the learning that occurred in the lesson. For example, I could hear detailed discussions happening between students, but when I checked their work afterwards, the work often consisted of only a few notes. Therefore, for this particular study, audio recording student</p> |

| | | |
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| | | discussions may have been a more effective method of measuring the learning taking place during the lessons. |
| Questionnaire | <p>At the start and end of the unit, the students were given a questionnaire. The questions focused mainly on their attitudes towards role-play and were intended to measure a shift in attitude throughout the study. This was achieved by providing statements by which students could tick ‘Strongly agree’, ‘Agree’, ‘Disagree’ or ‘Strongly disagree’. Students were encouraged to answer all questions, but if they did not know or did not have an opinion on a statement, were told to leave it blank. The benefit of this method is that it allows all respondents to reply, and does not rely on the articulation of the student (Cohen et al., 2007).</p> <p>The post-study questionnaire also included open answer questions encouraging the students to think about how the role-play helped them understand the subject matter. This is useful for allowing respondents to give extra detail in their answers (Cohen et al., 2007).</p> | This proved to be an effective method of measuring student attitudes before and after the unit. The open questions were particularly useful in allowing students to more fully express their opinions with regard to role-play. |
| Final written assessment | The final assessment for this task was an extended writing task, which asked the students: ‘What is the best way to control the spread of malaria in rural Mozambique?’ There was also a series of sub-questions to answer within the assessment (these are detailed in ‘4. Overview of Enquiry’). The sub-questions were chosen to reflect the focus of each lesson throughout the sequence. | This proved to be a useful source of information for allowing students to elaborate on the ideas gained during this unit in written form. It also provided an opportunity for students to consolidate their ideas over the whole unit, as their classwork was centred on discussion rather than written work. Therefore, this final assessment lent itself to a detailed analysis of the ideas students gained from this unit. |
| Own observations | As a lot of the work involved discussion, and there was perhaps more discussion happening than words being written on the page, I wrote a | My own observations were invaluable in tying together the learning that occurred and the lower quality data provided by the learning |

| | | |
|--|---|--|
| | <p>detailed evaluation of each lesson afterwards and made sure to include which discussions were being held. I was aware of my position as observer-participant, through being the teacher, leading the lessons and therefore having a large influence on the activities I am observing (Cohen et al., 2007).</p> | <p>journals and the classwork. I was aware that the students were discussing issues, but in the absence of audio recordings, I had to rely on my own notes between lessons in order to keep track of pupil progress throughout the unit.</p> |
|--|---|--|

Table 4: Data collections methods, justification and evaluation.

Data analysis

To support the analysis of student attitude shifts of role-play, open coding (Evans, 2009) was used to code the data provided by the open ended questions on the questionnaires. These were: ‘Working in groups’, ‘Fun’, ‘Characterisation’, ‘Understanding/learning’, ‘Writing’ and ‘Performance/Acting’. The benefit of this method allowed the analysis to be based on themes arising from the data, thus allowing conceptual ideas to be applied to raw questionnaire data (Evans, 2009).

In order to understand how role-play could support the students’ understanding of malaria, I summarised eight main themes from the literature that detailed different uses of role-play within geography. I used these themes as codes for the other qualitative data generated here. These codes are: novelty (Palot, 2006; Usher, 2010); ability to increase complexity of issue studied (Maddrell, 2007; Usher, 2010); increased confidence of students (Maddrell, 1994; Cutler & Hay, 2000); team work skills, including negotiation and debate (Cutler & Hay, 2000; Palot, 2006); removal of traditional hierarchies (Maddrell, 1994; Cutler & Hay, 2000); creation of an emancipated geography (Maddrell, 1994; 2007); empathy (Maddrell, 1994) and responsibility for an issue (Usher, 2010).

Ethics

The students were given reasonable informed consent (Cohen et al., 2007) about the nature of the study. This involved being informed that their classwork and questionnaire data would be used within an academic study investigating the use of extended role-play. As the study consisted mainly of lesson activities that formed part of their KS3 geography education, the students were not able to opt out of these activities, however the questionnaires were optional and they could opt for their work not to be quoted in the final study. In accordance with the British Educational Research

Association's (BERA) ethical guidelines for educational research (2011), students were informed that the school would not be named and that pseudonyms would be used throughout. This study was ethically approved by the Faculty of Education, University of Cambridge.

Overview of Enquiry

The enquiry sequence consisted of six lessons, five teaching lessons and one to complete a final assessment. A summary of each lesson can be found in Table 5 and an example lesson plan in the Appendix 1.

The role-play was set in a small rural village: Ngofi, Mozambique. The students were divided into five groups of characters: maize farmers (poor subsistence farmers), coconut farmers (slightly richer farmers who were able to sell their coconuts), NothingButNets.net (an American organisation who distributes free mosquito nets to poor communities), the World Health Organisation (WHO) and the Mozambique government, including the president. Each student was given an individually named character profile (see Appendix 2), along with a coloured work booklet. The booklets were coloured coded depending on their group, and featured a logo of their group. Students were instructed to write their name and their character's name on the front, in order to emphasise the personalisation element of this unit.

The scheme of work involved group work throughout, as well as writing answers to questions and watching video clips. Some lessons involved working with the characters in their own group and others involved mixed character groups. At the start of lessons three and four, students were given more information about what their characters thought about different issues relating to malaria. This information would then be used in the lesson. Discussion was promoted and students were encouraged to work together throughout each lesson.

The lessons were designed to advance understanding of malaria from a personal level to a broader understanding of how different groups were impacted by malaria, and which groups had the most power to prevent or control malaria. The emphasis changed from the start of the unit from how the characters were impacted, to how they could prevent it and then finally, who is most responsible for controlling the spread of malaria. Within this, I intended to provide students with enough material to understand the complex relationships between groups and that there was often no right or wrong answer for these issues.

| Lesson | Title | Lesson Objectives | Lesson content/Activities |
|--------|--------------------------------|---|---|
| 1 | Introduction to Malaria | To think about how your character is affected by malaria | Read character profile Discuss what malaria is, how it is spread and where it is found Characters prepare and present a speech about how they are impacted by malaria |
| 2 | Welcome to Ngofi | <i>Farmers:</i> To evaluate the personal and financial costs of malaria <i>Government:</i> To assess the current malaria situation in Mozambique <i>WHO:</i> To examine the methods of treating malaria and exploring the best ways to treat malaria <i>NothingButNets.net:</i> To consider the importance of Western aid in helping treat malaria | <i>Farmers:</i> Write a letter to the government asking for their help to fight malaria <i>Government:</i> Write a letter to the WHO to update them on the malaria situation in your country <i>WHO:</i> Use the information sheet to plan how to treat malaria in the rural village Prepare a leaflet to educate farmers about how malaria spreads <i>NothingButNets.net:</i> Design an advertising campaign to convince rich Westerners to donate money to help prevent malaria spreading in Mozambique |
| 3 | How can malaria be controlled? | To assess the various methods of treating and preventing malaria | Read character's opinion of the best way of treating malaria Re-arrange groups to work with other characters from different groups Complete table of methods of preventing and treating malaria Rank these in order (in character and then self) |
| 4 | Who can control malaria? | To identify who can impact the control of malaria To assess who has the greatest impact over the control of malaria | Watch video clip about the problems occurring with treatment of malaria Work in mixed character groups, complete worksheet showing what each group can do to control malaria Analyse who can do the most to control the spread of malaria |
| 5 | Who should control malaria? | To examine the issues relating to the distribution of mosquito nets To evaluate which group is most responsible for controlling the spread of malaria | In mixed character groups, characters discuss their experience with mosquito nets Discuss if mosquito nets should be given away for free or sold Class vote to see who is most responsible for controlling the spread of malaria |
| 6 | Final assessment | To consolidate the learning taken place over this unit To evaluate the most effective | Students complete the following assessment question: What is the best way to control the spread of malaria in rural Mozambique? |

| | | | |
|--|--|---|---|
| | | <p>way of controlling malaria in rural Mozambique</p> <p>To assess who is most responsible for controlling malaria in Mozambique.</p> | <p>Including the following: What is malaria? How is it spread? How does it impact different groups of people? What are the different ways to prevent the spread of malaria? Which one do you think is the most and least effective way to prevent the spread of malaria in rural Mozambique? Who is most responsible for controlling the spread of malaria in Mozambique?</p> |
|--|--|---|---|

Table 5: Outline of lesson sequence

Results and Analysis

This section will address the following research questions:

How did students’ understanding of malaria develop over the sequence of lessons?

How did student attitudes to role-play progress over six lessons?

How did the extended role-play assist students’ understandings of malaria?

How did students’ understanding of malaria develop over the sequence of lessons?

In this section, I will focus on the work of three students: two students from the group NothingButNets.net (Aidan and Hannah) and one student from the Mozambique Government (Daniel). All these students were selected because they were present in every lesson and, out of the class, Hannah showed the most significant increase in depth of ideas relating to malaria from her initial concept map to her final assessment; Aidan was the only student who completed the Learning Journal in detail after every lesson, so the advances in his understanding can be seen through this method; and Daniel exemplifies a shift in the concept of poverty in relation to malaria which was seen in other students in the class.

At the start of the sequence of lessons, I asked the students to complete a concept map to gain an idea of their prior knowledge about malaria. They were given eight key words as prompts (malaria, poverty, Mozambique, Africa, mosquitoes, temperature, nets, and water), and encouraged to add as

many extra words and ideas as they could. Some examples of their concept maps are shown in Figure 1.

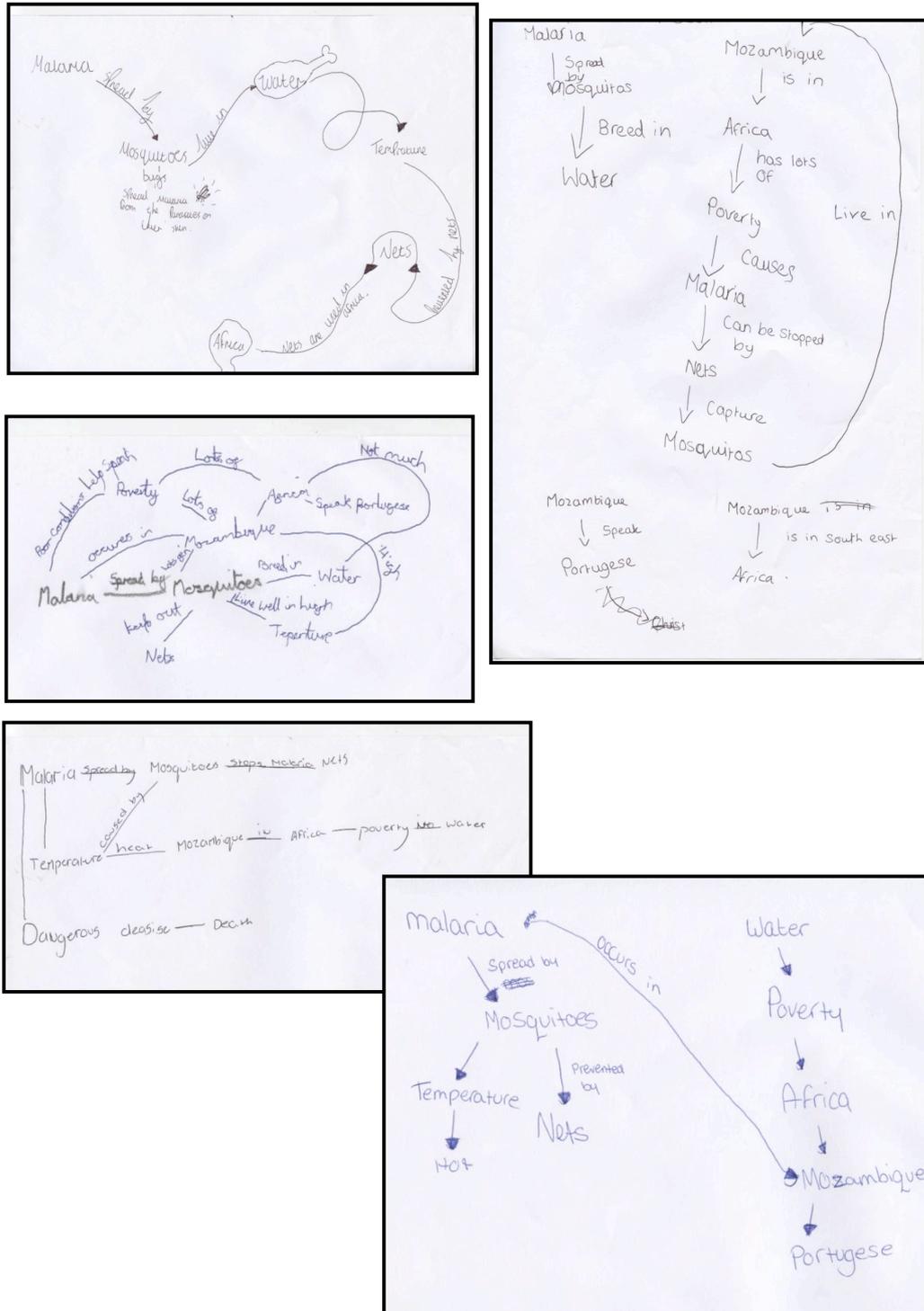


Figure 1: Examples of student concept maps

The students were aware that malaria was spread by mosquitoes, and that using nets were one way of stopping this. At start of this sequence of lessons, Comic Relief (a popular televised charity appeal) was shown on television, which raised awareness of some of these issues, particularly the usefulness of mosquito nets in stopping the spread of malaria. This is likely to have informed some students' background knowledge about malaria. They also knew that Mozambique was a country in Africa, which suffered large levels of poverty. Three of the students knew that mosquitoes bred in water, and one said that mosquitoes were 'spread' by water.

I will begin by showing the increase in the breadth and depth of ideas from Daniel's concept map to his final assessment through the annotations in Figure 2. I will then examine Hannah's developing understanding of these issues, as well as highlighting some of the misconceptions displayed in her work. Finally, I consider the progression of ideas shown from Aidan's concept map, through his learning journal, to his final assessment.

Hannah

In this section I will consider how Hannah’s ideas have developed in breadth and depth over the sequence of lessons. These are shown in Figures 3, 4, 5 and 6.

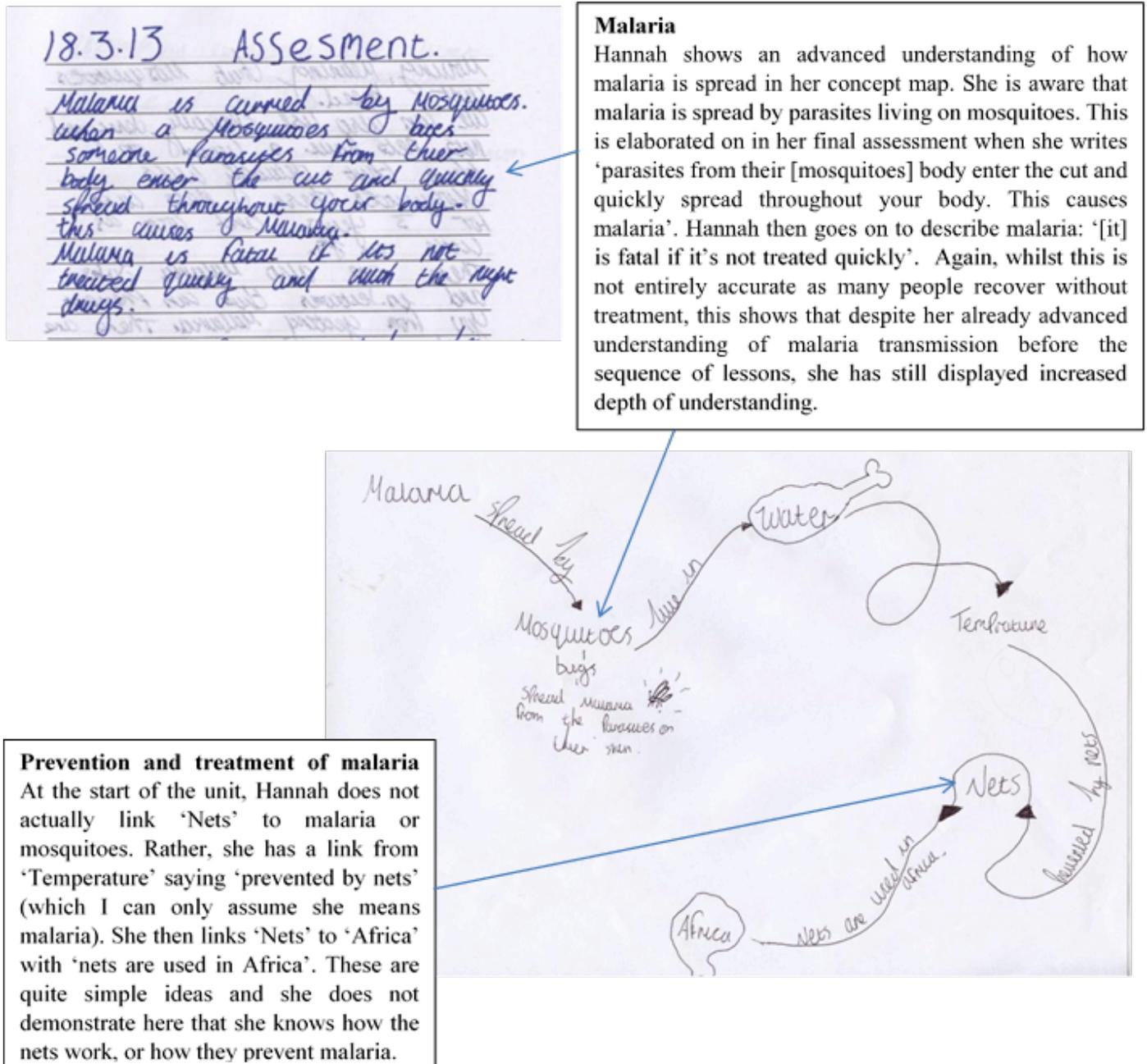


Figure 3: Hannah’s concept map and excerpt from final assessment

the spread of malaria can be kept under control, we can help prevent the spread of malaria by building new water pumps. Mosquitoes can only breed on still water, so when a pump the water is constantly moving, meaning that mosquitoes can't breed. We can also use specially designed nets, nets have a liquid on them that kills mosquitos, these nets last for 3 years and cost as little as \$5. There are also malaria jabs and injections that can prevent you from getting malaria. There are also anti malarial drugs which most people can't afford. I think the least effective way to control malaria is the vaccine, because most people can't usually afford them. I think the best way to control the spread of malaria is bed nets, as they are treated with chemicals to help kill mosquitoes.

Prevention and treatment of malaria
 In her final assessment, Hannah displays knowledge of several methods of controlling malaria. She writes about these in detail, attempting to explain how water pumps work (she understands that mosquitoes breed in still water, but misunderstands the role of the water pump. She wrote that the water pump keeps the water moving, whereas in fact the pump drains the stationary water). Hannah more accurately explains how mosquito nets are treated and can last up to three years. She thinks that these are the best way to control malaria overall.
 Hannah writes that 'there are also malaria jabs and injections that can prevent you from getting malaria'. Whilst there is intensive research into developing an effective vaccine, and I included this fact in Lesson 3, a lot of students (including Hannah here) assumed that there was already a vaccine for malaria.

Figure 4: Excerpt from Hannah's final assessment

Impacts of malaria
 Despite 'Poverty' being one of the concepts students were prompted with at the start of the unit, Hannah did not include this on her concept map. However, in her final assessment, she shows that she understands the impact of poverty on malaria treatment: 'if you are poor, you can't afford medicines to recover'. Hannah also displays an understanding of the impact of other conditions on malaria treatment: 'if you have an illness such as HIV, it is almost impossible to treat'. Whilst this is slightly inaccurate, (HIV patients have more risks associated with contracting malaria as opposed to otherwise healthy individuals) this still shows a more complex understanding of the interactions of different health issues prevalent in African countries.

Malaria impacts everybody differently. For instance if you have an illness such as HIV it is almost impossible to treat. Whereas if you are poor you can't afford medicines to recover.

Figure 5: Excerpt from Hannah's final assessment

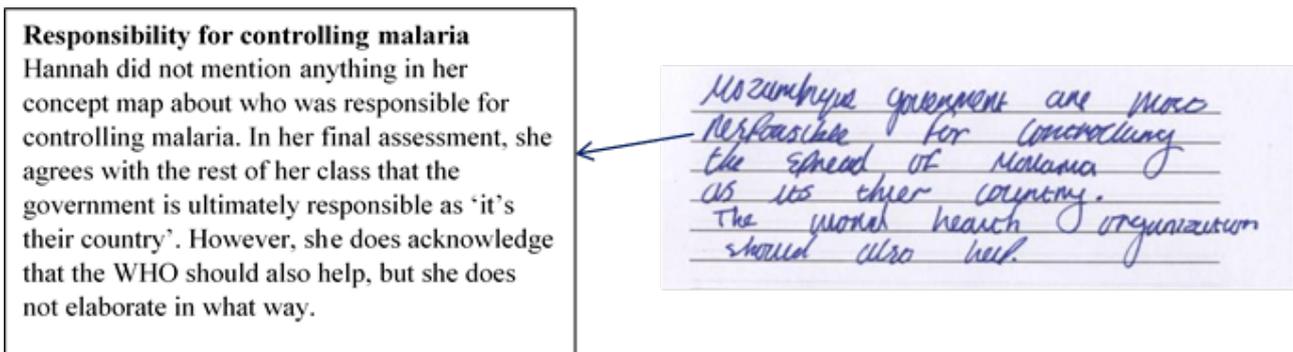


Figure 6: Excerpt from Hannah's final assessment

Hannah displays increased depth in relation to the concepts of malaria as an illness and the prevention and treatment of malaria. In her final assessment, Hannah includes the concepts of 'Poverty' and 'Responsibility for controlling malaria'. As these were not included on her original concept map, this shows an increased breadth in issues pertaining to malaria. However, Hannah does show some evidence of developing slightly misinformed ideas within her final assessment. This could possibly be due to the combination of high levels of student discussion and lower teacher input over this unit of work, thus leading to alternative conceptions being spread between students and not being immediately picked up on by the teacher.

Aidan

In this section I will examine how Aidan's ideas about the control of malaria developed throughout the sequence of lessons. Aidan was in the NothingButNets.net group.

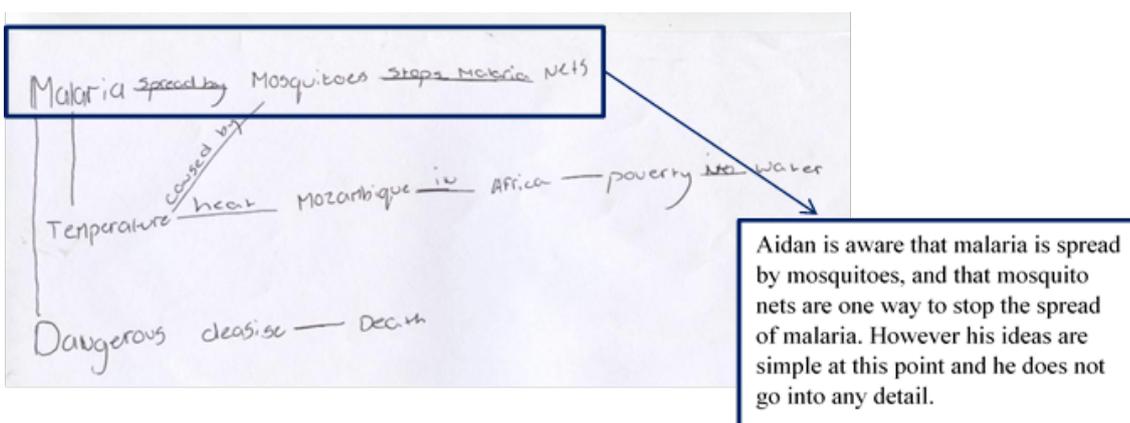


Figure 7: Aidan's ideas about malaria prevention before the sequence of lessons as shown on his concept map.

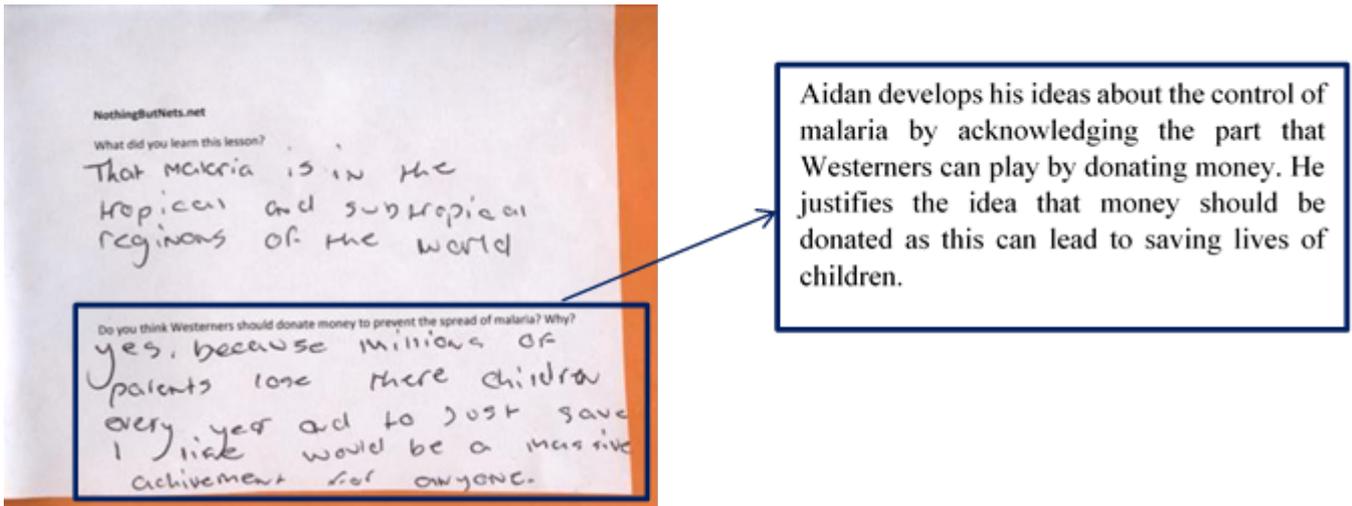


Figure 8: Excerpt from Learning Journal, Lesson 2

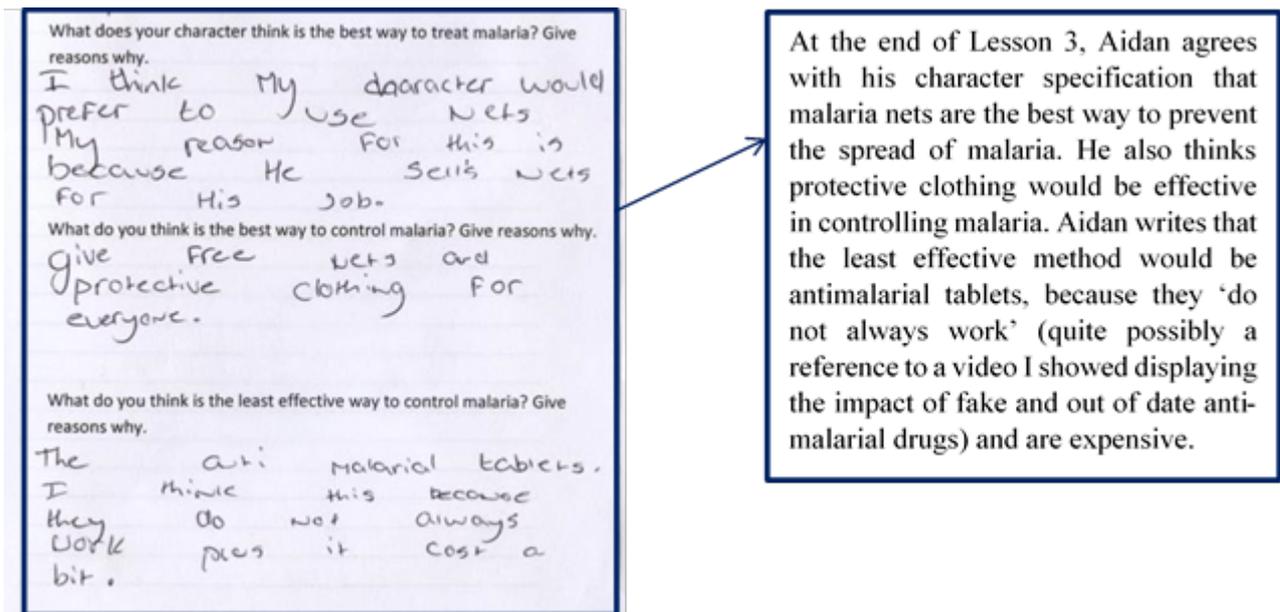


Figure 9: Excerpt from Learning Journal, Lesson 3

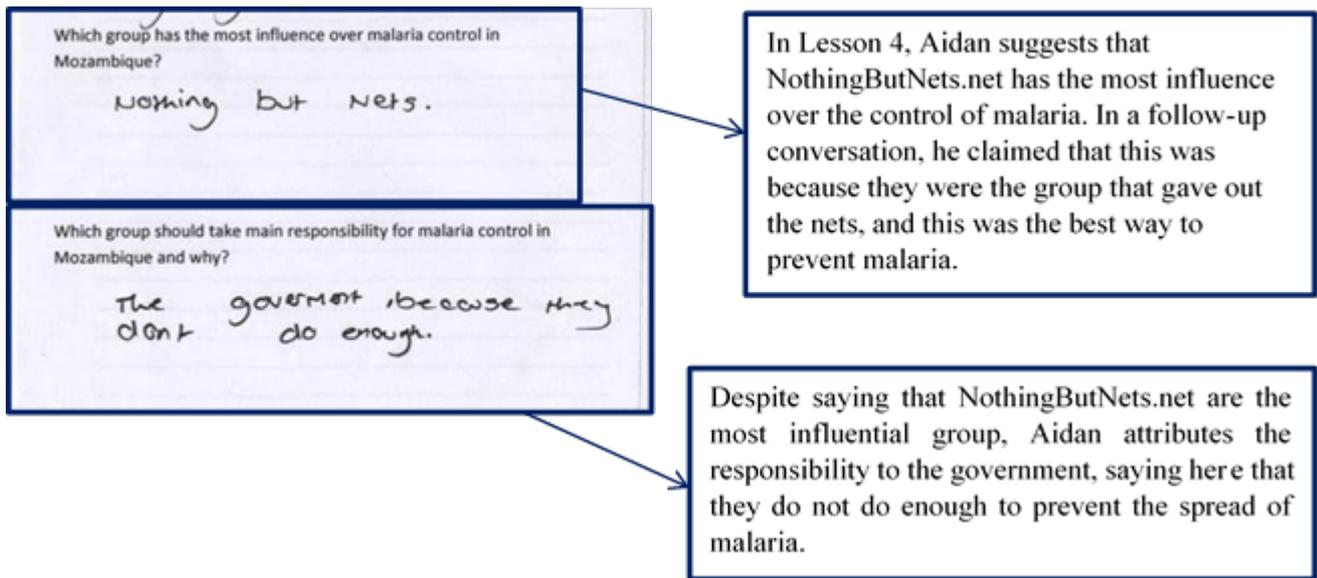


Figure 10: Excerpt from Learning Journal, Lesson 4

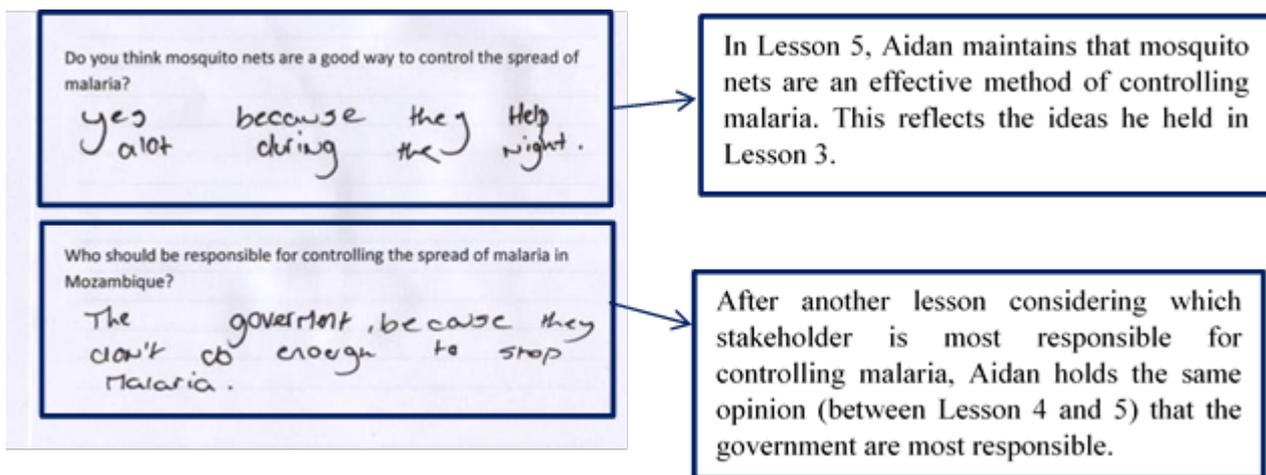


Figure 11: Excerpt from Learning Journal, Lesson 5

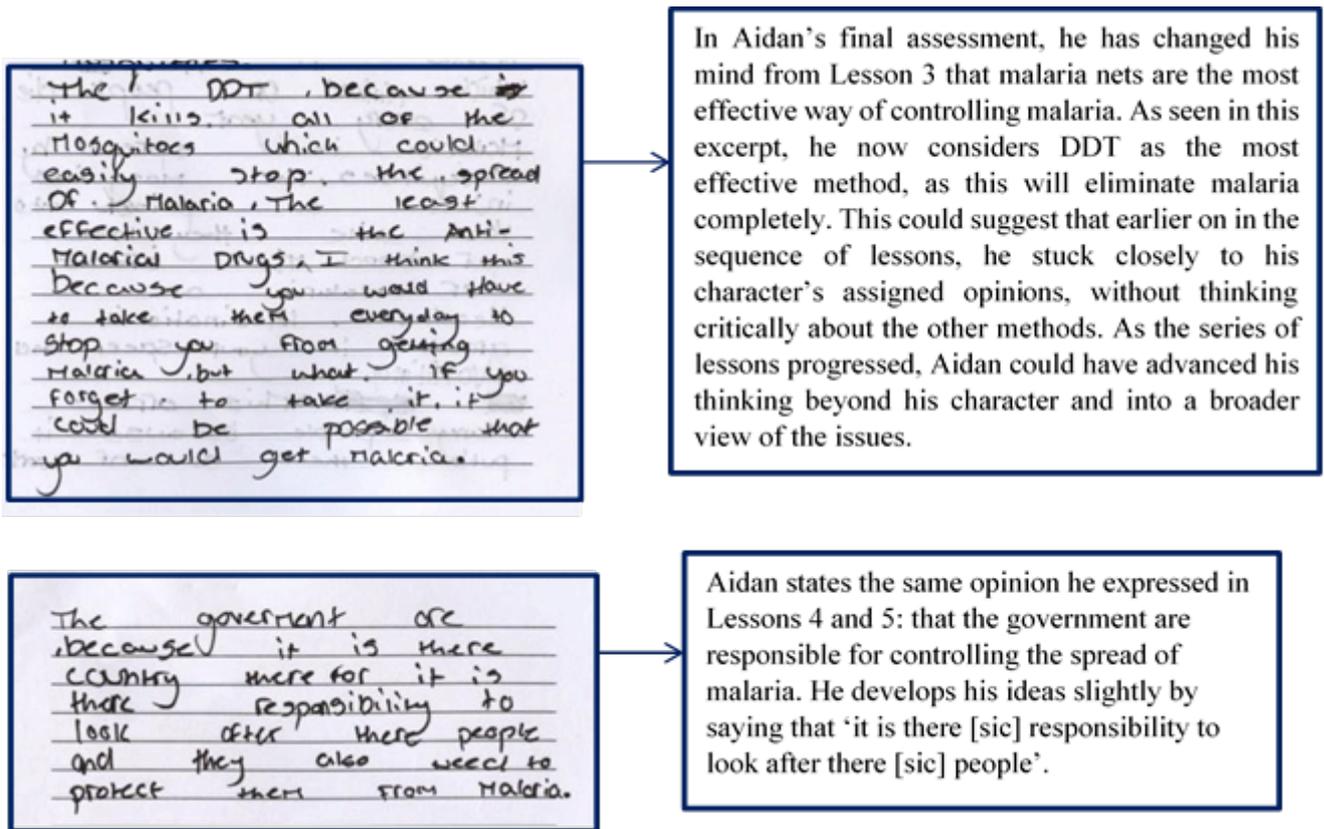


Figure 12: Excerpts from Aidan's final assessment, Lesson 6

As can be seen above, Aidan's ideas about the control of malaria have developed from simplistic ideas about the role of mosquito nets, to a more critical analysis of the effectiveness of different methods, as well as the responsibility of stakeholders in taking action. Towards the start of the sequence of lessons, his opinions are more closely aligned with that of his character (suggesting that mosquito nets are the most effective and that NothingButNets.net have the most influence). However, at the end of the sequence of lessons, Aidan's opinions have broadened, and he considers DDT to be the most effective method. Throughout Lessons 4, 5 and 6, Aidan maintains that the government are most responsible for controlling malaria. These ideas are consistent with Daniel and Hannah's opinions. One reason for this could be that cultural assumptions about healthcare inform students' opinions about healthcare in other countries (Herrick, 2010). As the UK government provides free healthcare through the NHS, this is a model the students are familiar with, and may influence their decision when discussing healthcare issues in Mozambique.

How did student attitudes to role-play progress over six lessons?

To answer this research question, the data used is taken from the questionnaires. Students were given one questionnaire before the sequence of lessons and one again at the end.

To assess how student attitudes to role-play progressed over the five lessons, I asked students before the unit if they had ever completed an extended role-play in any subject. I clarified that this was a role-play where they were given a character and had to remain in character throughout. 91.3% (n = 21) said that they had not, and the remaining 8.7% (n = 2) said they had in drama. However, upon further clarification, I discovered that this was playing the part of a character in a play, rather than using a character in a role-play scenario. As acting a part of a character in a scripted play requires memorising pre-defined script and text, this lacks the agency and decision making that a role-play requires. Therefore, I drew the conclusion that none of the students had completed an extended role-play in this way before.

As this was a new experience for all of the students, I considered it important to see whether this unit of work actually 'counted' as a role-play in their opinion. As mentioned before, role-plays are typically bound to one lesson and culminate in a whole-class debate, where students act as their characters in front of their peers. By contrast, this unit of work involved mainly group work discussions and writing tasks in character. Figure 13 shows the answers of the students. 60.9% (n = 14) said that they agreed it was a role-play, with the reasons mainly focused on the fact they were assigned a character. The students who were unsure (21.7%, n = 5) highlighted the fact that although they were given a character, there was not a large acting component to this course. This was the reason most cited for 17.4% (n = 4) of students saying that it did not count as a role-play. This implies that any shift in their attitudes towards role-play as a concept may not be attributable to this sequence of lessons, as they do not recognise this unit as a role-play.



Figure 13: Student opinions as to whether this module counted as a role-play. Quotes taken from post-unit questionnaire.

Regardless of whether or not the students regarded this unit of work as a role-play, the same themes were noted when comparing what students enjoyed about role-play in general before the lesson sequence, and what they enjoyed about this unit as a whole. Figure 14 shows proportional circles highlighting the positive and negative reasons given for role-play in general (before the unit started) and the positive and negative elements of this unit of work. Working in groups was a popular reason for enjoying role-play pre-sequence (see Figure 14: 26.1%, n = 6), which almost doubled after this unit to 47.8% (n = 11). Another noticeable shift was in the number of students mentioning that this role-play helped their understanding or learning about this topic, from 17.3% (n= 4) to 39.1% (n = 9). In the pre-sequence questionnaire, 13.0% (n = 3) mentioned that role-play did not help them learn, however no-one (n = 0) said this was the case after this unit.

With regards to the least favourite aspects of role-play, there are two main shifts. One is with regards to performance and acting. In the pre-lesson sequence questionnaire, 21.7% (n = 5) students expressed that performing the role-play or speaking in front of the class caused them embarrassment or that they did not enjoy the experience. As this sequence of lessons did not involve a large element of this, this was not a problem within this lesson sequence. However, there were complaints there was not enough acting (21.7%, n = 5), which is reflected in the least favourite aspects of this unit. The other shift is with regards to writing. Before the lessons, two students expressed that role-play did not involve writing. One regarded this as a positive trait, the other as a negative trait. However, after the sequence of lessons 17.3% (n = 4) complained that there was too much writing involved.

Overall, the students' opinions of this module were higher than their previously existing opinions of role-play. Their attitudes shifted towards a more positive experience with this unit, with the exception of writing (whereby four students said it contained too much writing).

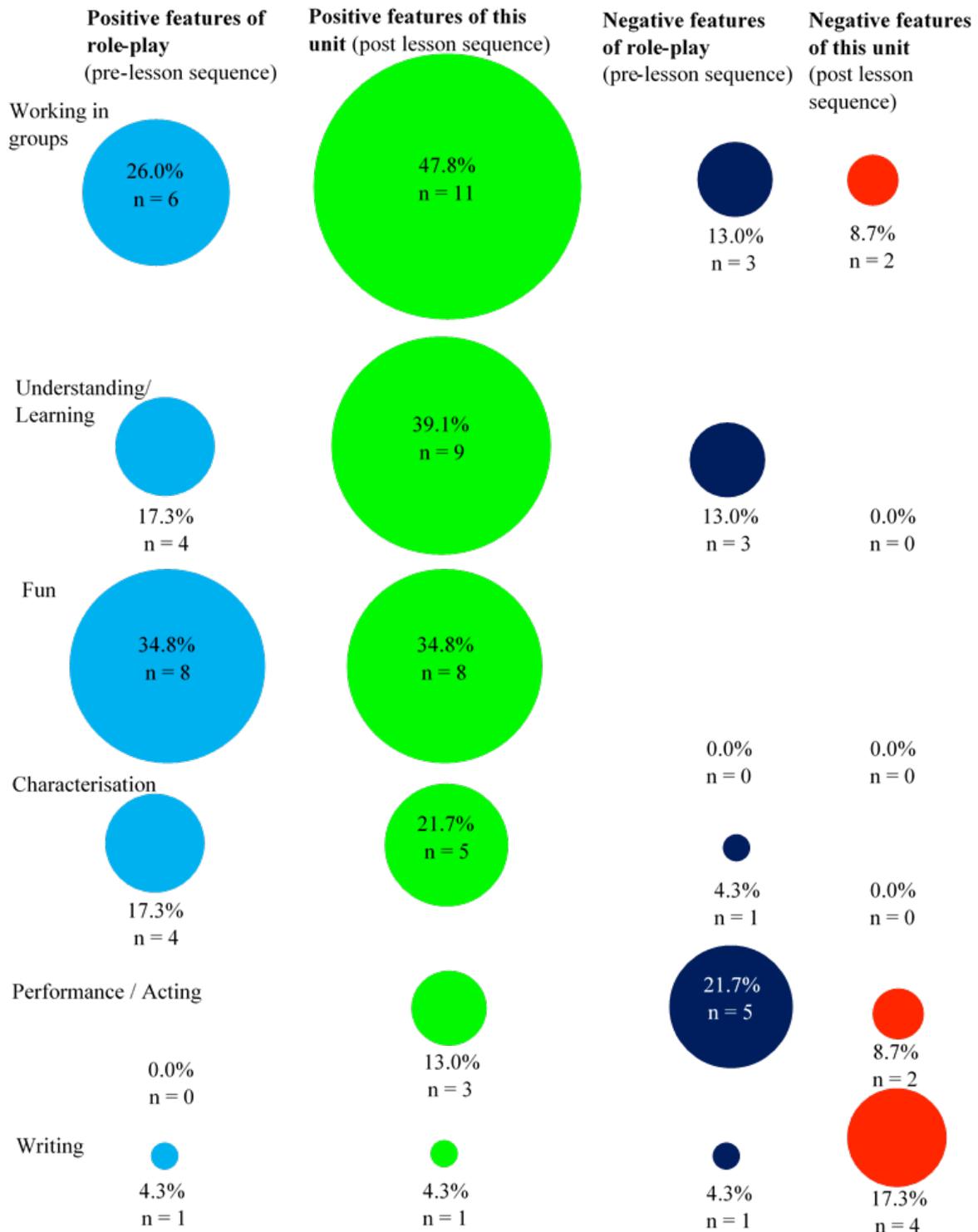


Figure 14: Proportional circles showing students’ most and least favourite aspects of role-play (before the lesson sequence) and most and least favourite aspects of the role-play unit. (These themes were identified by coding the open ended questions on the pre and post unit questionnaires. Open coding was used (Evans, 2009). Some students referred to more than one theme in their answers).

How did the extended role-play help students' understandings of malaria?

Using the literature on use of role-play in geography, I extracted eight broad conceptual benefits of using role-play to support geographical understanding. These are: novelty (Palot, 2006; Usher, 2010); ability to increase complexity of issue studied (Maddrell, 2007; Usher, 2010); increased confidence of students (Maddrell, 1994; Cutler & Hay 2000); team work skills, including negotiation and debate (Cutler & Hay, 2000; Palot 2006); removal of traditional hierarchies (Maddrell, 1994; Cutler & Hay, 2000); creation of an emancipated geography (Maddrell, 1994; 2007); empathy (Maddrell, 1994) and responsibility for an issue (Usher, 2010). All of these elements were displayed throughout this unit, and evidence for these is shown in Figure 15. Empathy, teamwork and novelty were the most evident from the students' feedback and classwork, whereas the more abstract themes (emancipatory geography and removal of hierarchies) relied more strongly on my interpretation of events.

One of the defining characteristics of this unit of work was giving the students a named character, which they kept for the entire scheme of work. In the post-unit questionnaire, I asked the question "Did having a character help you learn about malaria?". 8.7% (n = 2) left the question blank, 4.3% (n = 1) answered 'Kind of' and the remaining 86.7% (n = 20) answered 'Yes'. 17.3% (n = 4) indicated that having a character helped them understand more e.g. "has given [me] a better understanding and I have remembered more". 30.4% (n = 7) mentioned that this helped them because they "had to put themselves in someone else's shoes" and therefore understood the topic from a different perspective.

Another strength of the characterisation aspect meant that the 'othering' of the various groups was reduced. From my observations in the classroom, the references between groups were respectful, as if they were actually in the room. Rather than making broad generalisations about poor farmers that needed help from outside agencies, because representatives from all groups impacted by malaria (both those at risk of catching it and those who want to prevent it) were present in the discussions, all groups had an equal voice.

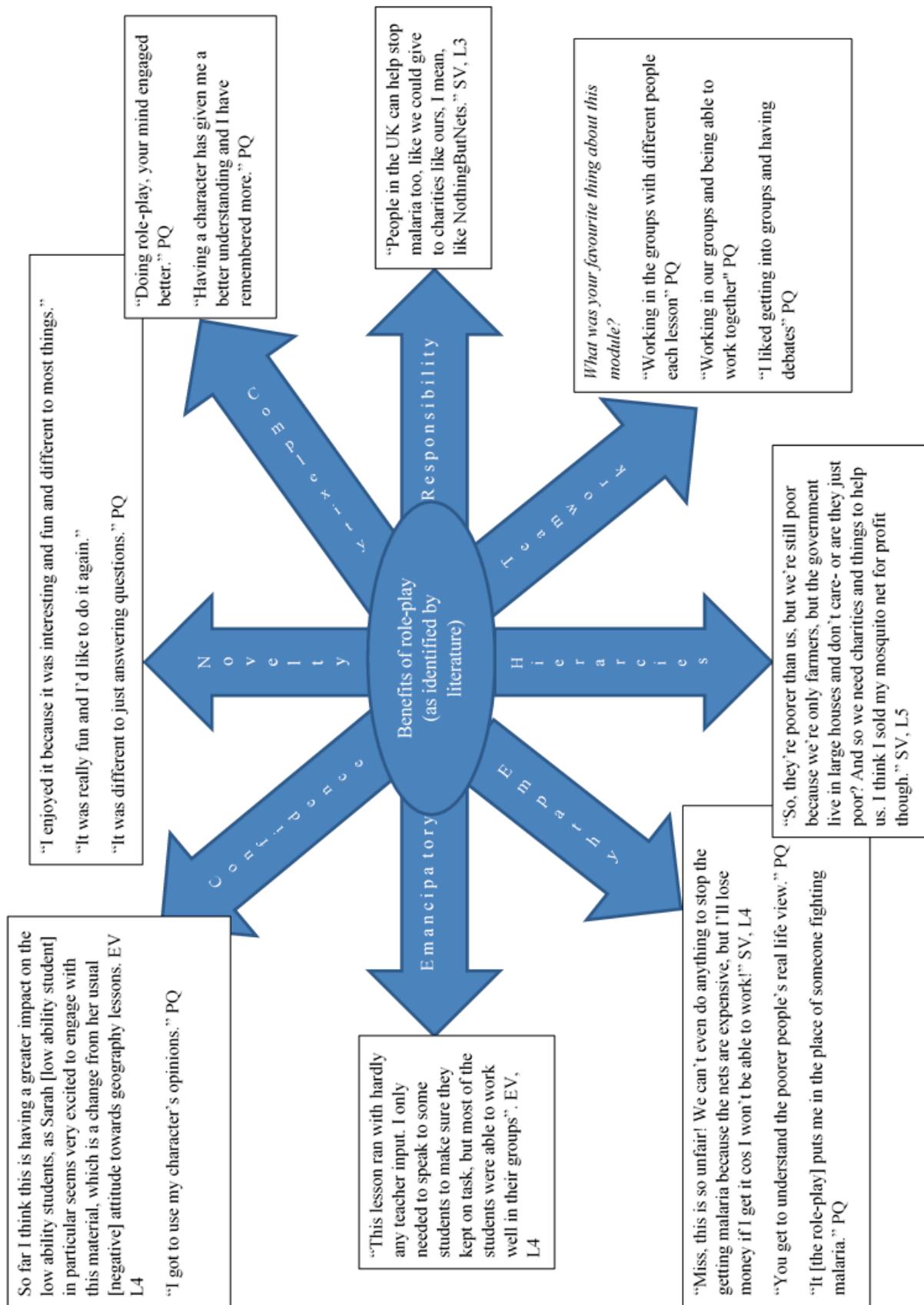


Figure 15: Evidence of benefits of role-play demonstrated in this module

Discussion

In order to explore the impact of an extended role-play on year 8 students' understandings of malaria, I set out to answer the following research questions:

1. How can role-play in lessons support geographical learning?
2. What should KS3 students learn about malaria?
3. How did students' understanding of malaria develop over the enquiry sequence?
4. How did student attitudes to role-play progress over six lessons?
5. How did an extended role-play assist students' understandings of malaria?

In order to inform background ideas for this study and to answer the second research question, I explored the geographies of health and disease. Although some of the research I looked at was in reference to teaching undergraduate geography courses, these provided key concepts and ideas that would be used to support the second research question. Del Casino Jr (2004) introduced the importance of local geographical knowledge and the use of scale when addressing topics within the geography of health, which I incorporated into the lessons through the character groups (from local farmers to the WHO). Herrick (2010) introduced the idea of studying health within a critical pedagogy, where power structures are examined alongside the facts of the disease. She concluded that despite her efforts to engage in these discussions with her students, they were still forming opinions based on their cultural bias towards healthcare issues. This is relevant because some of the tasks throughout the unit encouraged the students to think about who was responsible for controlling malaria, and as the results showed later on, the students suggested the government were ultimately responsible (mirroring British cultural attitudes towards healthcare).

I then considered the literature that used role-play to support geographical learning. Role-play tended to be used as a one or two lesson part of a sequence of lessons, often separate from the rest of the sequence of lessons. There was however scope for these benefits to be applied over several lessons, through using an extended role-play. The topic of health geography is particularly suited to this pedagogy, especially when considering ideas about impact, prevention and control of the disease as there are multiple stakeholders involved.

Del Casino Jr (2004) found that varying the scale from the national, to local, to personal was an effective way to teach about the impacts of HIV/AIDS, as this engaged his students on a more personal level with the subject matter. The results of this investigation are similar, as the varying scales that the students had to work on through the role-play encouraged them to think about malaria in different contexts (for example, the economical and personal). This was supported by the results shown in the student attitudes, as 9 students said having a character in this unit helped their understanding and learning of this topic.

The students' understanding of malaria progressed in several ways over the lesson sequence. Before the lessons started, they had basic knowledge about what malaria was and that it was spread by mosquitoes. However, by the end of the unit, they were able to suggest several ways in which it could be treated, make links between poverty and malaria, comment on the economic impact of malaria and assign responsibility for who should take responsibility for the control.

All the students in the class (23) stated that the government was the most responsible for controlling the spread of malaria. This is likely to be because of cultural assumptions within the UK, that the government is responsible for provision of state healthcare through the NHS. All students in the class are white British citizens, so this model is one they are familiar with. As Herrick (2010) discovered with her classes of students, the cultural bias of government supported healthcare could perhaps be the reason for this year 8 class selecting the government as being the most responsible for controlling the spread of malaria.

The misconception about a vaccine existing for malaria (as displayed by Hannah) could also be explained by the fact that vaccines are widely available for a variety of diseases in the UK, and therefore they assumed a vaccine was available for malaria too. Although I can accept that my wording on the sheet (stating that *research* was being undertaken into a vaccine) may not have made it entirely clear to all the students, it could be suggested that the high level of discussion and low teacher involvement meant that misconceptions were spread quicker between students (and stayed unidentified longer) than in other pedagogical methods. However, Cheong et al. (2010) also found that this was a common misconception about malaria control amongst their students in Brunei, so as this idea is held beyond the bounds of a British classroom, it is important not to overstate the British cultural influence of this misconception.

With regards to other misconceptions held by students, Daniel states in his concept map that ‘Poverty causes malaria’. This is one of the key misconceptions identified by Cheong et al. (2010). Daniel developed this misconception by the end of the unit to the more detailed idea that actually the poor were more affected by malaria, rather than their poverty causing malaria. Indeed, he even states that malaria is spread by parasites living on mosquitoes, showing a more advanced level of understanding about malaria transmission.

Overall, the students have shown a progression of ideas throughout this unit, moving from simpler, basic ideas about malaria to more sophisticated, nuanced ideas about the interrelationships between groups. For example Hannah shows this by considering that the government are most responsible for controlling the spread of malaria, but that the WHO should help. The unique nature of the role-play (and particularly one that extends over several lessons) allows students to consider the relationships between groups. In the next section, I will discuss this in more detail, as well as outlining implications for future practice.

Implications for future practice

Overall, the use of the extended role-play as a pedagogical tool for teaching about the treatment of malaria could be considered successful. The students were enthusiastic throughout, and their enjoyment of the unit was shown in the post unit questionnaire. From the students’ point of view, the strengths appeared to be working in groups, having fun while learning and to be doing something different to normal. The majority also said that having a character helped them learn about the topic, because they found it useful considering issues from another perspective.

The positive elements of role-play identified by the literature were also present during this unit, as detailed in Figure 15. However, whilst towards the end of the unit the students worked well in groups, this took several lessons to get used to. Despite being enthusiastic towards the project from the very beginning, this enthusiasm occasionally bubbled over into too much talking and potential for distraction from the task at hand. The first three lessons of the unit involved at least five minutes of table moving and lots of talking before getting started on the tasks. This was hard to manage from a behavioural point of view, as there would often be several issues occurring in the room at the same time. On reflection, clearer expectations laid out beforehand could have gone some way towards preventing this.

In Lesson 2 of the sequence, each of the different groups had different tasks to do. I designed this lesson with Maddrell's (1994) idea of an emancipatory geography in mind, and optimistically envisaged that I could give each group a pack of activities and they would work hard completing these with minimal teacher input. This was not the case at all, and involved lots of running around on my part and explaining all the different tasks to all the different groups. Some of the packs involved several different tasks (e.g. NothingButNets.net were supposed to create four separate elements of a campaign to appeal to Westerners), and it was highly ambitious to expect all of these activities to be completed.

The quality of the work from all groups in Lesson 2 was probably the lowest quality out of all the lessons. I attribute this to: too many tasks happening in the room at the same time and the students not understanding the tasks. As all the tasks were different, I was not able to give an explanation from the front of the room. This led to behavioural issues (talking, moving around the room to talk to friends) occurring on one side of the room while I was explaining tasks to groups on the other. If I were to do this module again, I would still keep each group of characters doing a different activity in Lesson 2, as this formed an important part of strengthening their character's position with regards to malaria. However, I would keep this to one simple task per group e.g. the WHO would have to produce a leaflet explaining how malaria is spread.

At the start of Lessons 3, 4 and 5, the students were given different groups to work in. This ensured that there would be one character from each group in this new group, to give different voices to the discussion. As the students were not given these new groups until the start of the lesson, a lot of time was spent moving people to these new groups. However, by Lesson 4 and 5, the students were quicker at doing this and settled to work much faster. Again, giving clearer expectations before instructing the groups to move would have probably solved this.

Towards the end of the unit in Lessons 4 and 5, the students became a lot better at working productively in groups. This could have possibly been because I made my expectations clearer throughout the unit and had to enforce more behaviour management strategies (such as separating certain members of the class) in order to ensure more focus on the work. It could also have been because they became more used to working in groups, and more accustomed to the nature of the tasks being set.

With regards to the tasks that were set in each lesson, after realising I had set the standard too high in Lesson 2, I simplified the task in Lesson 3. However, this was too far the other way, and lots of students finished early. Teaching this unit has taught me a lot about what level of work can be expected from groups working together, and what can be achieved if there is less opportunity for distractions and irrelevant talking (by planning tasks that are simpler and providing extensions for faster workers). Therefore, if I were to teach this sequence of lessons again: I would have more scaffolding in place for tasks that might be regarded as more complex, not have too many tasks occurring in the room at one time and provide extensions for those students who were able to work faster. In light of student feedback in the post-unit questionnaire, I would also incorporate a lesson dedicated to the more traditional style of role-play, where students would discuss an issue in a whole class debate.

The use of an extended role-play was definitely worth the effort involved creating 23 different characters, five different groups and a vague storyline. As well as gaining immense enjoyment from the task, the students were able to understand more complex ideas relating to malaria and treatment of malaria, as shown by comparing the students' basic ideas from their initial concept map to the detail shown in their written final assessment. Moving away from more simplistic ideas about giving Western aid to solve medical issues in poorer countries, this class were able to engage with the lived experience of being at risk of malaria and the challenges involved with controlling the disease. As well as the practical element to it, I think an important element of this extended role-play was giving a voice to those who live in Mozambique, as well as the outside agencies that have the means to help the country.

An extended role-play could be used for any geographical topic that involves different interest groups, and that can be spread across several lessons. It would be interesting to see where else the extended role-play could be used, perhaps over a tourism scheme of work (groups of tourists, tour operators and indigenous people?) or renewable energy scheme of work (groups of investors in wind farm technology, local residents, non-local consumer, wildlife expert, national park owners?). Whilst I wish I could say that the possibilities are only limited by the imagination, the new draft curriculum changes for Key Stage 3 suggest that there will be more of a narrow focus on specific facts about places, rather than the freedom to explore the wider concepts of geography with creative teaching devices, such as the extended role-play. It remains to be seen what the implications of this

new curriculum will be, but personally, I will strive to keep notion of an embodied 'geographical imagination' alive and well in my classroom.

References

- Armstrong, K. (2003) 'Application of Role-Playing in Tourism Management Teaching: An Evaluation of a Learning Method', *Journal of Hospitality, Leisure, Sport and Tourism Education*, 2, 1, 5 – 16.
- British Educational Research Association, (2011) *Ethical Guidelines for Educational Research* [online]. Available at: <http://www.bera.ac.uk/> [Accessed on 22 September 2013]
- Britt, M. A. (1995) 'Research on Trial: A Pedagogy for Research Methods Instruction' in *Teaching of Psychology: Ideas and Innovations: Proceedings of the Annual Conference on Undergraduate Teaching of Psychology*. New York, 124-133.
- Brown, K. M. (1994) 'Using Role Play to Integrate Ethics into the Business Curriculum: A Financial Management Example', *Journal of Business Ethics* 13, 2, 105-110.
- Cheong, I., D. Treagust, I. Kyeleve & P. Oh (2010) 'Evaluation of Students' Conceptual Understanding of Malaria', *International Journal of Science Education*, 32, 18, 2497 – 2519.
- Cohen, L., L. Manion & L. Morrison (2007) *Research Methods in Education*, Routledge.
- Cowling, D. & B. Digby (2010) *Health Issues in Geography*, Sheffield: Geographical Association.
- Cutler, I. & I. Hay (2000) 'Club Dread': Applying and Refining an Issues-Based Role Play on Environment, Economy, and Culture', *Journal of Geography in Higher Education*, 24, 2, 179 – 197.
- Del Casino Jr, V. (2004) 'Scaling Health and Healthcare: Re-presenting Thailand's HIV/AIDS Epidemic with World Regional Geography Students', *Journal of Geography in Higher Education*, 28, 2, 333 – 346.
- DfES (2007) *The National Curriculum for England and Wales*. [online]. Available at: <http://media.education.gov.uk/assets/files/pdf/g/geography%202007%20programme%20of%20study%20for%20key%20stage%203.pdf> [Accessed 22 September 2013]

- Duveen, J. & Solomon, J. (1994) 'The Great Evolution Trial: Use of Role-Play in the Classroom', *Journal of Research in Science Teaching* 31, 5, 575-582.
- Errington, E. (1997) *Role-play*, Canberra: Higher Education Research and Development Society of Australasia Inc.
- Evans, M. (2009) 'Analysing Qualitative Data' in E. Wilson (Ed.) (2009) *School-based Research*, Los Angeles: Sage.
- Fulawka, S. & T. Berry (2010) 'The Role of Student-Run Organizations Within Global Health Promotion Initiatives: Commentary and Call for Research', *Global Health Promotion*, 17, 3, 54 – 57.
- Herrick, C. (2010) 'Challenging Assumptions: Teaching, Documenting, Producing and Negotiating 'Health'', *Journal of Geography in Higher Education*, 34, 3, 345 – 362.
- Jensen, J. L. & R. Rodgers (2001) 'Cumulating the Intellectual Gold of Case Study Research', *Public Administration Review* 61,2, 236-246.
- Kirkwood, J. & Ross, D. (1997) 'Multimedia Design and Development: An Industry Simulation Project Delivered on the Internet', in J. Osborne, D. Roberts and J. Walker (Eds.) *Open, Flexible and Distance Learning: Education and Training in the 21st Century*. Launceston: University of Tasmania, 234-239.
- Ladousse, G. P. (1987) *Role Play*. Oxford: Oxford University Press.
- Luff, I. (2000) 'I've been in the Reichstag: Rethinking Role Play', *Teaching History*, 100.
- Lyon, J. (2009) 'Health, Disease and Young People', *Teaching Geography*, 2, 68 – 71.
- Maddrell, A. (1994) 'A Scheme for the Effective Use of Role Plays for an Emancipatory Geography', *Journal of Geography in Higher Education*, 18, 2, 155 – 162.
- Maddrell, A. (2007) 'Teaching a Contextual and Feminist History of Geography through Role Play: Women's Membership of the Royal Geographical Society (1892 – 1893)', *Journal of Geography in Higher Education*, 31, 3, 393 – 412.
- McLaren, P. (1999) 'Revolutionary Pedagogy in Post-Revolutionary Times: Rethinking the Political Economy of Critical Education', *Educational Theory*, 48, 432 – 462.
- Palot, I. (2006) 'Drought of Ideas for that Introductory Lesson?', *Teaching Geography*, 2, 51 – 53.

- Prothero, R. M. (2005) 'Malaria: Some Recent Developments', *Geography*, 90, 2, 180 – 185.
- Raisner, J. A. (1997) 'Using the 'Ethical Environment' Paradigm to Teach Business Ethics: The Case of the Maquiladoras', *Journal of Business Ethics* 16,12/13, 1331-1346.
- Usher, B. (2010) 'The Low Carbon London Project', *Teaching Geography*, 1, 21 – 22.
- Wolf, T., Wright, L. & Imhoff, T. (1994) 'Collaborative Role-Play and Negotiation: A Cross-Disciplinary Endeavor', *Journal of Advanced Composition* 14, 1, 149-166.
- Worth, P. (2011) 'Which Women Were Executed For Witchcraft? And Which Pupils Cared?', *Teaching History*, 144, 4 – 14.
- Yin, R. K. (1994) *Case Study Research: Design and Methods*, 2nd edn. London: Sage.

Appendix 1: Sample of lesson plan

| | | |
|-----------------------------|---|---|
| Class/ability: | 8.x, Mixed ability | |
| Date/time: | 11/03/13, Period 3 | |
| Lesson Title: | Who can control malaria? | NC Ref: Malaria – Extended Role-Play |
| Learning objectives: | <p>To identify who can impact the control of malaria</p> <p>To assess who has the greatest impact over the control of malaria</p> <p>To evaluate who is most responsible for controlling the spread of malaria.</p> | |
| Resources checklist: | Powerpoint presentation; character opinions; learning journal entries | |
| Timing: | <p>Starter: Video</p> <p>Students watch the video and answer the question: What are the problems with controlling the spread of malaria? http://www.youtube.com/watch?v=GnY_BG46rK8 Group discussion: What issues were raised? How could these be solved?</p> <p>5 mins</p> <p>What can your character do to control the spread of malaria? Students read the piece of paper telling them what their character can do about the spread of malaria. Why do you think this is? Do you think this will help control malaria?</p> <p>15 mins</p> <p>Task 1:</p> <ol style="list-style-type: none"> 1) Get into groups (by number) 2) Complete the sheet by filling in what each group can do to control the spread of malaria. Each member of the group has different information. 3) For each group– select the way you think the best way to control malaria. Put a star next to this option. 4) Identify links on the sheet between the groups. Label the links <p>10 mins</p> <p>Task 2: Answer in your workbooks: Who has the most influence over the control of malaria? Write a PEE paragraph to answer this question. Who has the least influence over the control of malaria? Write a PEE paragraph to answer this question.</p> <p>10 mins</p> <p>Plenary: Learning Journal Students complete the learning journal entry for this lesson.</p> | |

Appendix 2: Sample character profiles

Sylvain

You are a maize farmer. You work long hours and spend most of your day outside.

Your wife and young child have died from malaria. You are left with two young children.

If you catch malaria, you are forced to take time off work. If you do not work, your family will go hungry.

You are poor and work only to feed your elderly parents and yourself. You cannot afford to send your children to school.

Martine

You are a coconut farmer living in a rural village in Mozambique. You work long hours and spend most of your day outside. You make enough money to buy food and basic education for your children. You have a young child with malaria and want to take them to the hospital. However, if you have to take a few days off work, you will not get paid.

Dr. Matthew Smith

You are a doctor working for the World Health Organisation (WHO). You are a malaria specialist. You are concerned about the global spread of malaria. You are stationed in Mozambique, and want to work with the government to prevent the spread of malaria in Mozambique and to provide effective treatment to all citizens, particularly those in rural areas.

Elizabeth

You are a net distribution manager for the organisation NothingButNets.org. This is an international organisation which wants to provide nets to all people at risk of catching malaria across the world. You have been stationed in Mozambique and it is your job to provide all families in the village with nets to prevent the spread of malaria.

Armando Emílio Guebuza

You are the president of Mozambique. You are concerned about the economic and social impacts malaria is having on the citizens of your country. You are trying to run government-led projects to help stop the spread of malaria in Mozambique, but you are finding this hard due to a lack of finances and high levels of distrust among rural residents. You are willing to work with international agencies, such as the World Health Organisation, as they can provide money and resources.