Acting Locally, Thinking Globally: How are World Heritage Values communicated within the onsite learning process?

by

James Gareth Davies

A thesis submitted to the University of Birmingham for the degree of Doctor of Philosophy

Cover image: Source: Malgorzata Trelka. 2016.

Ironbridge International Institute for Cultural Heritage

School of History and Cultures

College of Arts and Law

University of Birmingham

September 2018

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Abstract

The number of World Heritage Sites designated by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) has increased dramatically in recent decades, however the true extent of their wider role as an educational resource remains largely unknown given the paucity of work regarding how their Outstanding Universal Value is communicated through the educational process. Using the Ironbridge Gorge (UK) as a case study, this thesis examines the extent and ways by which World Heritage values are communicated to school children during the onsite learning experience. The research is based upon the observation of educational visits and interviews with staff and visiting teachers. This 'on the ground' perspective reveals the problems of communicating the values of World Heritage and how this is difficult to separate from wider educational frameworks and established learning programmes. The research posits that despite a popular learning programme and the communication of the designation through interpretative media, there is a low awareness and prioritisation given to World Heritage values. Such findings contrast with the explicit communication desired by UNESCO and therefore raise profound questions about who is responsible for communicating World Heritage and highlight the disparity between theory and practice in relation to World Heritage Education.

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Abbreviations

AHRC- The Arts and Humanities Research Council

CDA- Collaborative Doctoral Award

DCMS- Department for Digital, Culture, Media & Sport

DVMWHS- The Derwent Valley Mills World Heritage Site

ICOMOS- International Council on Monuments and Sites

IGMT- Ironbridge Gorge Museum Trust

IIICH- The Ironbridge International Institute for Cultural Heritage

OUV- Outstanding Universal Value

SOUV- Statement of Outstanding Universal Value

STEM- Science, Technology, Engineering and Mathematics

STEAM- Science, Technology, Engineering, Arts and Mathematics

UNESCO- The United Nations Educational, Scientific and Cultural Organization

WHS- World Heritage Site

WHSs- World Heritage Sites

WHYH- World Heritage in Young Hands

Chapter One: Introduction

1.1 Introduction

In *The Road to Little Dribbling: More notes from a small island*, Bill Bryson recounts his visit to the Ironbridge Gorge and the museums located within it (Bryson 2016). At Coalbrookdale, he recalls that "the museum had just admitted three coachloads of school children who would spend the next twenty or thirty minutes racing everywhere before being rounded up by harried teachers, and guided into a special area where they would eat their packed lunches" (Bryson 2016:320). Similar observations can be made at many a museum, archaeological/heritage site or centre around the world. What is not apparent in Bryson's observation is that the school children were visiting a World Heritage Site (WHS). A site recognised for its Outstanding Universal Value which "means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity" (UNESCO 2013:35). A visit by school children to a site designated as a World Heritage should foster "Peace in the Minds of Men and Women" (UNESCO 1945) due to its "common importance" (UNESCO 2013:35). Through the case study of the Ironbridge Gorge WHS, this research answers the question, 'How are World Heritage values communicated within the onsite learning process?'.

Figure 1: Ironbridge Gorge World Heritage Site Location Map. Created by Author from UK map- NordNordWest.2008. United Kingdom Location Map. Wikimedia Commons. Available from:

https://commons.wikimedia.org/wiki/File%3AUnited_Kingdom_location_map.svg

Accessed 03/11/2017.

The case study for this research is the Ironbridge Gorge WHS, which is located near Telford in the West Midlands region of England (Figure 1). The site was inscribed onto the United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage List in 1986, and was one of the first batch of WHSs in the United Kingdom. UNESCO is a specialized agency of the United Nations which promotes international education, scientific/cultural

reforms and heritage preservation. The World Heritage Programme was the product of the 1972 UNESCO Convention Concerning the Protection of the World's Cultural and Natural Heritage which has been ratified by 193 States Parties to date (UNESCO 2018). As of 2018, there are 1092 properties on the UNESCO World Heritage List (UNESCO 2018).Thirty two years on from the designation of the Ironbridge Gorge, this research will consider to what extent does being a World Heritage Site inform the onsite educational experience?

Figures 2a-b: Photographs of the two primary monuments of the Ironbridge Gorge WHS- The Iron Bridge (a) and the Old furnace (b) in Coalbrookdale. Source: Author 2016.

The international significance of the Ironbridge Gorge WHS is that it was "one of the birthplaces of the Industrial Revolution" (IGMT 2017d:25). Whilst the landscape of the Ironbridge Gorge is a dense palimpsest of archaeological remains from the eighteenth century industrial past, the two most important monuments from the Age of Industry considered to be of Outstanding Universal Value (OUV) are the Old Furnace in Coalbrookdale and the Iron Bridge (Figures 2a-b). The Old Furnace provides the evidential remains of where the first iron to be made with coke was smelted allowing for the mass production of iron, whilst the Iron Bridge, a global icon of the Industrial Revolution, was the first cast iron bridge in the world dating from 1779. The fieldwork within Ironbridge Gorge WHS, will consider if and how World Heritage Values (both the global significance and UNESCO designation) are communicated during the onsite learning experience.

Given the OUV of World Heritage Sites (WHSs), especially their "common importance for present and future generations of all humanity" (UNESCO 2013:35), this consideration of what do we teach the next generation and of the educational role of these sites is the focus of this thesis. UNESCO recognises that "one is never too young to start to understand other people, and the classroom is not the only place where World Heritage education can be practiced" (World Heritage Centre Paris, Communication, Education and Partnerships Unit 2014). This research will therefore consider if and how the World Heritage concept is processed by the visiting schools.

There has been little research carried out into the learning practices within WHSs and the associated pedagogy of World Heritage. The research is set within the context of World Heritage theory, the practice of World Heritage Education and

Museum/Heritage Education at WHSs and is influenced by Values Education and Learning Theory. This context has been developed through an extensive literature review and through this case study the research will consider what are the implications for WHSs and World Heritage Education globally.

1.2- Significance of the Thesis: Research Context

Zarmati (2012:114) recognises that generally "teachers tend not to record or analyse their teaching methods; they just enact them on a daily basis". Zarmati (2012) made this comment in relation to research into learning practices within museums. This highlights the importance of undertaking research into the experience and practices of learning outside the classroom- in museums and at heritage sites. In 1988, Cooper and Latham (1988:255-256) argued that educational visits were under-researched, and that "little is known about the nature of educational visits", whilst Hooper-Greenhill and Moussouri (2001:28) called for "open-ended studies that ask the simple question: what is happening here?" in relation to the onsite learning experiences at museums and heritage sites. Over recent decades there has however been an increase in research in this area (for an overview see Griffin 2004, Behrandt and Franklin 2014). Through the case study of the Ironbridge Gorge WHS (its museums and heritage sites), new insights into the pedagogy of educational visits can contribute to this developing field of research.

Holleland and Johansson (2017:1) note that "the field of World Heritage research is at present a thriving trans-disciplinary and trans-institutional field of research". This thesis builds on this area of research with a focus on two core aspects: communicating the concept of Outstanding Universal Value and the relationship

between learning and WHSs. Research into both areas remains either limited or unfulfilled. The International Council on Monuments and Sites (ICOMOS) identified that "that the concept of OUV is often poorly understood and requires improved communication generally and at site level" (2008a:14), whilst Grünberg (2014:7) concludes that "the amount of literature thoroughly dealing with World Heritage education is almost neglectable".

In terms of research into learning at WHSs and World Heritage Education, a greater discussion will be provided in the literature review, however an overview is discussed here. There has been research into the potential of WHSs as learning resources (Khawajike 1990, Henson 2003, 2004b, 2008, Aplin 2007, Rissom 2007, Logan 2013a, Corbishley and Jorayev 2014), and the evaluation of existing practice at a WHS (Corbishley 2005, Badran 2010, Davies 2014, Jaafar *et al* 2016, Wang *et al* 2016). These sources are especially important given the absence of "best practice examples or guidelines available on World Heritage Education" (Grünberg 2014:88). In recent years, there has also been an increase in research into the use of WHSs as classroom based learning resources especially through digital approaches (Sikora 2007, Ströter-Bender 2007, Tsai 2011, Iinuma *et al* 2013, Soos 2014, Lackovic *et al* 2015). McDonald (2013) remains the only academic research into the evaluation and curriculum mapping of World Heritage Education resources and Grünberg (2014) in researching evidence for the institutionalising of World Heritage Education in schools (ASPnet schools in Germany). Research by Logan (2010, 2013b, 2014), Logan and Wijesuriya (2015), Stone (2015), Richon (2005) and Vujicic-Lugassy and Richon (2008) provide important overviews of educational programmes by UNESCO especially the World Heritage Education Programme. It is acknowledged that the literature review does not consider

relevant works in other languages, for example, work on World Heritage Education from Germany (Dippon 2012, Ströter-Bender 2010 and Wirth 2010), and Japan (Nakazawa and Tabuchi 2008).

This thesis has responded to Grünberg's (2014:90) call for greater research in this area, stating that "the field of heritage and education and especially World Heritage and education has not been investigated thoroughly. It is hoped that more heritage experts and academics in all fields of humanities will conduct research about this topic in the future". For the first time, this research provides new insights into the demography and geography of educational visits to a WHS and the communication of World Heritage Values, through the case study of the Ironbridge Gorge.

Grünberg's (2014) research discusses in detail the educational value of WHSs and World Heritage as a curriculum theme, especially for their human values such as identity-building, cultural diversity, sustainable development and conveying global topics. Grünberg (2014:57) considers WHSs "as portals through which global historical and contemporary processes can be approached". Smith (2012:142) recognises that they are "important for what they can teach local, regional, and even international communities, not only about their past, but also their present and future", whilst Shackley (1998:1) suggests that "visiting a World Heritage Site should be a major intellectual experience, on a different scale from visiting some theme park". Aplin (2007:378) reaffirms the potential of WHSs as learning resources, for both environmental and culture awareness but also in "addressing issues of peace, inter-cultural understanding, and global environmental protection, all vital to human survival in the twenty-first century". Through the

fieldwork at the Ironbridge Gorge WHS, for the first time, this research has explored if (and if not, why not), the potential of WHSs as learning resources is being met, as is widely proposed in the existing research literature.

1.3- Significance of the Thesis: Policy and Guidance Context

Article 4 of the 1972 World Heritage Convention states that each State Party has "the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage" (UNESCO 1972); it is through Outreach and Education that this 'transmission' is undertaken. With inscription, education and communicating World Heritage Values becomes a duty and obligation, as recognised by Ringbeck (2008:50), WHSs "have the responsibility to educate".

Furthermore, Article 27 enshrines the educational duties of WHSs, as it states that:

"the States Parties to this Convention shall endeavour by all appropriate means, and in particular by educational and information programmes, to strengthen appreciation and respect by their peoples of the cultural and natural heritage. They shall undertake to keep the public broadly informed of the dangers threatening this heritage and of the activities carried on in pursuance of this Convention"

(UNESCO 1972).

The educational obligations are also enshrined through UNESCO guidance in the Operational Guidelines, primarily in Section VI.C – Awareness-raising and education (UNESCO World Heritage Centre 2015). It is directed at national level

(State Parties) rather than at site level (World Heritage properties). For example, Section VI.C 217 notes that:

"States Parties are encouraged to raise awareness of the need to preserve World Heritage. In particular, they should ensure that World Heritage status is adequately marked and promoted on-site"

(UNESCO World Heritage Centre 2015).

UNESCO World Heritage guidance therefore places the responsibility for delivering World Heritage Education with the States Parties. The use of the World Heritage Educational Resource Kit (UNESCO 2002b) which was developed in collaboration between the UNESCO World Heritage Centre and the UNESCO Education Sector is encouraged. The Kit is a product of UNESCO's World Heritage Education Programme which is managed by the World Heritage Centre in Paris. The World Heritage Education programme aims to "develop new and effective educational approaches, methods and materials to introduce/reinforce World Heritage Education in the curricula in the vast majority of UNESCO member states" (UNESCO 2015a). These resources and initiatives developed by UNESCO over the past 20 years to support States Parties in embedding engagement with WHSs and learning about UNESCO and WHSs demonstrate the arm's length approach to World Heritage Education due to the disparity in obligations and delivery.

Under the heading of 'International Assistance', Section VI.C 220, the realities of the educational duty are expanded upon:

"States Parties are encouraged to develop educational activities related to World Heritage with, wherever possible, the participation of schools, universities, museums and other local and national educational authorities"

(UNESCO World Heritage Centre 2015).

Whilst the designation management guidance and World Heritage programme resources are directed to States Parties to embed within and filter down the national educational frameworks and institutional structures, the reality is it is the sites and schools who shape the onsite learning experience at WHSs. Unlike McDonald (2013) and Grünberg (2014) whose focus was the States Parties level of World Heritage Education delivery, this research foregounds the site level.

In Annex 7 of the UNESCO World Heritage programmes Operational Guidelines, there is guidance for the site monitoring process known as Periodic Reporting, which includes more information about the expectations for World Heritage Education. For example, Section I.5 notes that States Parties should "provide information on education (primary, secondary and tertiary) and information programmes… [which inform] of the dangers threatening the heritage and of activities carried out in pursuance of the Convention" (UNESCO World Heritage Centre 2015). Furthermore, Section II.4 notes that World Heritage Properties should provide information "on scientific studies, research projects, education, information and awareness building activities directly related to the property and to comment on the degree to which heritage values of the property are effectively communicated to residents, visitors and the public" (UNESCO World Heritage Centre 2015). Examples of the type of information include:

- "Is there a plaque at the property indicating that the property is a World Heritage property?

- Are there educational programmes for schools?

- What facilities, visitor centre, site museum, trails, guides, information material etc. are made available to visitors?

- What role does the World Heritage designation play in all these programmes and activities?"

(Section II.4-UNESCO World Heritage Centre 2015).

The Periodic Reporting does not ask for in depth information about the educational infrastructure, offer and level of engagement at property level, instead the focus is on the extent to which the World Heritage branding has been embedded onsite. The greater guidance on presentation of sites over onsite learning programmes and initiatives, can also be seen in other areas of UNESCO World Heritage management. UNESCO's World Heritage Strategic Objectives (UNESCO 2013:46-7), are known as the Five C's, as they are focussed around Credibility, Conservation, Capacity Building, Communication and Communities in relation to the World Heritage Convention. Educational activities, resources and training fall under 'Communication' and is not made explicit with regards to onsite learning. Furthermore, in UNESCO's Managing Cultural Heritage Resource Manual for Site managers, the sentence "Available educational resources" in a management checklist in the appendix is the only consideration given to the matter (UNESCO 2013a:135). Despite education being a core mission for UNESCO, and being a duty enshrined in the 1972 World Heritage Convention, within the World Heritage guidance for States Parties there is limited guidance and

monitoring framework to support States Parties and WHSs deliver World Heritage Education. This is important when considering to what extent World Heritage Values are communicated during the onsite learning experience.

Beyond the UNESCO World Heritage Centre guidance, it is important to outline the wider UN and UNESCO strategies and objectives, within which WHSs can be seen as important learning resources. For example, World Heritage, Education and Intercultural dialogue and peace are all priorities in UNESCO's current Medium-Term Strategy (2014-2021) Mission and Strategic Objectives (UNESCO 2013d). Notably is strategic objective 2 "Empowering learners to be creative and responsible global citizens", strategic objective 6 "Supporting inclusive social development and promoting intercultural dialogue and the rapprochement of cultures' and strategic objective 7 'Protecting, promoting and transmitting heritage" (UNESCO 2013d:19). Educational visits to WHSs have the ability to support these strategic objectives.

Although the World Heritage Programme sits within UNESCO's Culture Sector, WHSs as learning resources can support UNESCO's Education Strategy 2014-2021 and the wider UN Sustainable Development Goals, for example the UN target that "by 2030, all learners acquire knowledge, skills, values and attitudes to establish sustainable and peaceful societies, including through global citizenship education and education for sustainable development" (UNESCO 2016d:21).

UNESCO declared that 2013-2022 is to be the International Decade for the Rapprochement of Cultures. They propose that this initiative, is "a commitment to explore new articulations between cultural diversity and universal values" with the universal values of respect, tolerance, human rights and dignity at the core

with the aim of "safeguarding of cultural heritage, and the promotion of global citizenship education" (Bokova 2015:4). This research contributes to this area, by showcasing the existing work and future potential of WHSs as learning resources and identify the extent to which they are spaces for intercultural dialogue.

Despite this widely recognised potential, UNESCO's site monitoring data (Periodic Reporting), reveals that Education is a common high priority capacity-building area for the WHSs (UNESCO 2013c). Conservation, Education, Visitor Management and Risk preparedness were the top priorities within the sub regions of West and Central Africa, South Asia, North East Asia and the Pacific States (UNESCO 2013c:45-48), highlighting that the delivery of education remains a low priority for WHS managers (Young 2016). This research although focussed on a single World Heritage property, provides an important source of knowledge and reference as part of this high priority capacity building and knowledge demand.

Finally, as Serota (2009:21) reminds us, the UK is a signatory to the 1989 United Nations Convention on the Rights of the Child, which states in Article 31 that every child "has the right...to participate freely in cultural life and the arts". Therefore, WHSs, along with museums and heritage in general should be "a normal, familiar and everyday experience for all young people in this country" (Serota 2009:21). It is therefore important to remind WHSs and stakeholders, that Education and Outreach is a duty and obligation of WHS designation and the ratification of the 1972 Convention. This is a timely reminder as many WHSs are undergoing a period of change through management restructuring and the rewriting of their Management Plans.

1.4 Significance of the Thesis: Socio- Political Context

Although the case study site is located in England, the UK as a whole will be considered given that it is the UNESCO States Party, despite the fact that the political, economic and social differences in each of the four home nations result in differences in terms of World Heritage management and education. Examples from other WHSs in the UK and further afield will be used to contextualise and support arguments and evidence.

In March 2016, the UK Government published a White Paper on Culture which for the first time included a whole page on World Heritage (DCMS 2016:46). The paper stated "We want to set a global standard in the stewardship of World Heritage Sites" (DCMS 2016:46). Through the case study of one UK WHS, and importantly one of the first for the UK, this research considers to what extent are WHSs meeting such high expectations with specific focus on their role and potential as learning resources.

As recognised by UNESCO UK (2016a:9), there is "significant untapped potential for UNESCO in the UK". This commitment by the UK Government reaffirmed in the revised Department for Digital, Culture, Media and Sport (DCMS) departmental plan published in December 2017 (DCMS 2017). For the first time, WHSs were embedded as a governmental strategic objective, as objective 4.6 was "Promote the historic environment so that people can appreciate and enjoy heritage assets" with the action being to "sponsor World Heritage Sites in the UK, using them to promote tourism and soft power".

However, as Lochrie (2016:1393) recognises, in the UK, "World Heritage has no formal status in terms of organisational administration and no additional financial

assistance. Given World Heritage's lack of formal status, site management is typically reliant on the goodwill of various stakeholders coming together, regularly in an amorphous fashion". It is within this messy on the ground reality, one which contrasts with the top down processes outlined in UNESCO's operational guidelines, that the case of Ironbridge Gorge WHS has been researched. It reveals the disparity between the guidance and practice in terms of the relationship between educational visitors to WHSs and World Heritage Education.

November 2016 was the 30th anniversary of the inscription of the UK's first WHSs. In 1986, 7 UK sites were inscribed on the UNESCO World Heritage List including the Ironbridge Gorge. As part of the celebrations, Historic England published a YouTube showcasing the WHSs and World Heritage Values (Historic England 2016). The video reaffirms the human values of World Heritage as it states that "We need World Heritage Sites to remind us of our shared culture and common humanity" (Historic England 2016). This thesis builds on this momentum and critically analyses' if these connections are being made by educational visitors. In the recent UNESCO UK report on the value of UNESCO to the UK, one WHS coordinator proposes that "more work needs to be done on raising awareness of what it means to be a World Heritage Site" (UNESCO UK 2016a:19). It is hoped that this research will provide a useful framework for understanding the onsite realities and opportunities for the communication of the OUV and World Heritage inscription.

Back at the 2001 UNESCO World Heritage Committee meeting, Tarja Halonen, the President of the Republic of Finland stated that:

"We must encourage networking and co-operation between schools and we have to promote dialogue between cultures at all levels. There is a need for UNESCO to support its member states in developing values education. This is education for peace, human rights and democracy – in other words, education for the prevention of intolerance, discrimination and conflict. In this respect I see great potential in the world heritage education project initiated by UNESCO."

(UNESCO 2001b:23)

Seventeen years on, the potential for World Heritage as learning resources for fostering human values, has only got more important. Meskell (2016:92) has argued that "not since the cessation of World War II has there been such a pressing need for a cultural organisation to mobilise for peace and mutual understanding between peoples", given the threat of terrorism and extremism. In response to the recapture of Palmyra WHS in Syria from Daesh (Islamic State), the Director-General of UNESCO (2009-2017), Bokova stated that Palmyra "carries the memory of the Syrian people, and the values of cultural diversity, tolerance and openness that have made this region a cradle of civilization" (UN News Centre 2016). Meskell (2016:93) proposes, such statements and the social media campaign Unite4Heritage, are part of "UNESCO's cosmopolitan media campaign" rooted in "scientific humanism" and part of their global meta-narrative of a positive and inclusive modernist universalist, is of increasing relevance as a counter narrative to Daesh's extremist divisive relativist narrative. As summarised by the former UNESCO Director-General, education and engagement initiatives aim to "engage young people across the world in countering hate propaganda, in strengthening the narrative of a single humanity"(Bokova 2016a:10). Given the

threats of the 21st century, the potential role of WHSs in promoting intercultural dialogue, cultural tolerance and peace has never been so great. This research on the reality of World Heritage Education and analysis of the extent to which World Heritage Values are being communicated to educational visitors at WHSs is therefore set within the context of the ever-increasing proclamations of their importance and relevance.

1.5- Research Aim and Objectives

In order to answer the research question, the research aim and objectives were developed to ensure that the research was focussed and achievable. Although this will be discussed in greater detail in the methodology chapter, it is important to make these clear from the outset.

Through the case study of the Ironbridge Gorge WHS, this research was focussed on further understanding the educational role of UNESCO's World Heritage Sites through the two core aspects of the process of communicating the concept of Outstanding Universal Value and the relationship between the learning process and value of World Heritage Sites.

The research aim was to explore if and how World Heritage values are communicated during school visits to the Ironbridge Gorge WHS. This builds on the research question, 'How are World Heritage values communicated within the onsite learning process'. The terminology used will be defined in the following literature review chapter.

The specific research objectives were:

Research Objective 1: To what extent are World Heritage values embedded in the onsite learning process (school visits and workshops at the site)?

Research Objective 2: To what extent does being a World Heritage Site inform the educational experience?

Research Objective 3: How is the World Heritage concept processed by the visiting schools?

Research Objective 4: What are the implications for World Heritage Sites and Education globally?

1.6- Chapter Framework

There are seven chapters in the thesis as follows:

Chapter one is the introduction which has introduced the research question and objectives and establish an overview of the research context in terms of literature, policy and politics.

Chapter two is the literature review. The literature review establishes the validity of the research question within current theoretical frameworks. The chapter introduces research into the educational role of WHSs as well as UNESCO's World Heritage Programme. The chapter conceptualises and critiques the concept of Outstanding Universal Value, and defines World Heritage Values. World Heritage Education is discussed in terms of its definition and delivery at different levels: Global, National, Site and Schools. The literature review draws on sources from museum and heritage education to define and understand the onsite learning process framework and the context for learning at WHSs.

Chapter three is the context chapter. This chapter provides the practical framework for the research through an overview of the development of the Ironbridge Gorge World Heritage Site (Research area). The Ironbridge overview focuses on the site's inscription, site management (IGMT) and the development of the site as a learning resource. This chapter considers how the site communicates its World Heritage inscription within the context of onsite interpretation and learning.

Chapter four is the methodology chapter. This chapter establishes the methodological framework for the research. It outlines and justifies the chosen

methodologies for data collection during the fieldwork and dataset analysis, as well as providing a reflective account of the research process.

Chapter five is the first analysis chapter which is focussed solely on the findings in relation to the current use of the Ironbridge Gorge WHS as a learning resource and the onsite learning process. This chapter draws upon the theoretical framework set out in the literature review and build upon the contextual knowledge established in the context chapter.

Chapter six is the second analysis chapter builds on chapter five but is focussed on the findings in relation to World Heritage. It outlines if and how World Heritage Values are communicated during the onsite learning experience at the Ironbridge Gorge WHS. This chapter draws upon the theoretical framework set out in the literature review and builds upon the contextual knowledge established in the context chapter.

Chapter seven is the conclusions chapter. This chapter draws conclusions from the primary research datasets and literature review. Recommendations are drawn from the conclusions with the aim of establishing a framework for WHSs and UNESCO to re-approach World Heritage Education, in light of the new understanding about the communication of World Heritage Values and the importance of evaluation and potential of Education at WHSs.

Chapter Two: Literature Review

2.1 Introduction

WHSs designated by the intergovernmental organisation United Nations Educational, Cultural and Scientific Organisation (UNESCO) as part of their World Heritage programme form the subject of this research. Over the past 40 years, there has been an increasing amount of scholarly literature into the background, systems and processes, and impacts of the World Heritage programme. Brumann (2014:2177) has proposed that this new research focus around UNESO's World Heritage programme has resulted in a new "academic sub-field". World Heritage research centres have been established around the world (Logan 2014) and new academic programmes have been developed for example the Ironbridge Institute's own World Heritage Studies MA programme. Given the diversity of WHSs and the scale of stakeholder reach and impact, Albert and Ringbeck (2015:3) rightly acknowledge this popularisation as they note that research interest is no longer "restricted to the disciplinary contexts and scientific expertise implied in monument preservation, or architecture, anthropology or historical science, archaeology or geography, natural science and geoscience". This study has therefore embraced the ever increasing and diverse scholarly literature in order to answer the research through engaging with sources from heritage studies, archaeology, anthropology, geography, economics and philosophy relating to World Heritage research.

Holleland and Johansson (2017:7) identified that research into WHSs and UNESCO's World Heritage programmes contain "extensive use of specialised vocabulary…derived from the convention text and its Operational Guidelines",

which are the "foundational and governing texts of the field of World Heritage". This literature review will define and critically discuss this "technical jargon" (Holleland and Johansson 2017:7).

Given the research focus on the educational value of WHSs and the onsite learning experience, the literature review will discuss the extent to which research has been undertaken into these areas. From the outset however it is important to clarify some of the terminology associated with this area of interest, notably the concept of World Heritage Education.

UNESCO defines World Heritage Education as:

- "a multidisciplinary approach which seeks that students learn more about the cultural and natural sites of outstanding universal value inscribed on the World Heritage List;

- acquire new skills needed to help conserve these sites which are protected by the 1972 UNESCO World Heritage Convention;

- forge new attitudes and a life-long commitment to preserving our local, national and World Heritage for present and future generations

- and play an instrumental role in safeguarding the tremendous cultural and natural diversity of the world through international co-operation"

(UNESCO 2002a)

A more recent definition comes from the focal point for UNESCO's World Heritage Education Programme who defined World Heritage Education as being "all about transmitting values, underpinned by the need to promote intercultural understanding, respect for cultural diversity and to create a culture sensitive to creating a sustainable environment – principles which are central to UNESCO's

mission and at the heart of its contribution to the 2030 Agenda for Sustainable Development" (Quin 2016:1). Quin (2016:2) goes on to state that "world Heritage education is oriented toward the future, and not only concerned with the historical meanings of a site. It rather understands World Heritage as an opportunity to draw attention to social development and to help young people make their voices heard". This definition is important as it demonstrates how UNESCO aspire for World Heritage Education to be not just learning about the World Heritage Convention, WHS designation and site significance but more about personal development.

Grunberg (2014:23) provides a further definition of World Heritage Education, which considers it an educational approach "that conveys the values and meanings of, but also threats to and needs of World Heritage to all people is already laid out in the World Heritage Convention in Article 27 [to strengthen appreciation and respect by their peoples of the cultural and natural heritage]".

Stone (2014c:7903) notes that World Heritage Education aims "to promote awareness among young people of the importance of the UNESCO 1972 World Heritage Convention and a better understanding of the interdependence of cultures among young people". Whilst Logan (2013b:35) proposes that these initiatives reflect the three challenges in World Heritage Education, "to encourage schools to integrate world heritage into the curriculum, to create new resource materials geared to elementary schools, and to provide for the sustained empowerment of young people".

The fragmentary definitions of World Heritage Education result from the limited research into World Heritage Education and differences in understanding the

concepts of learning/education. They range from learning focussed on understanding the World Heritage Convention and the OUV of a particular WHS to a broader process of learning based on personal development and fostering positive human values. As Fordham and Hollinshead (2002:2) rightly recognise "World Heritage Education is a new education concept", and like any new educational concept it is subject to differences in its definition and delivery.

For this purpose of this research, a broader definition is therefore sought, one which encapsulates learning in terms of understanding the heritage significance but also the wider opportunities for personal development and learning about UNESCO's goals, beliefs and expectations of the impact of World Heritage designation.

In this thesis, World Heritage Education will be defined as an educational approach, which seeks an understanding of the ascribed values of the Outstanding Universal Value and the human values of WHS status notably cultural tolerance and peace (Davies 2016). These concepts will be critically considered and discussed in this literature review.

Ultimately, World Heritage Education and the communication of World Heritage Values can be considered at different scales of delivery: global (the actions and initiatives of UNESCO), regional (EU/Asia UNESCO Association), national (States Parties or National Commissions for UNESCO), at site level (WHS property or individual museum or heritage site), at school level and at the individual level of the teacher. Given the focus on a single case study WHS, the site level has been prioritised during the desk based research.

This chapter will introduce the concepts of World Heritage Values and World Heritage Education. The chapter defines these concepts and establish the theoretical framework within the context of academic research from the broad fields of Education, Museum studies and Heritage studies and Anthropology. This framework of understanding will form the basis for analysing the empirical work in the following chapters. It is structured in a way which guides the reader from the broad fields of education, museum education and heritage education to the research specific theory of World Heritage Values and its associated pedagogy which is at the heart of the research question and objectives.

2.2- Heritage Education

Given that the research question is 'How are World Heritage values communicated within the onsite learning process', it is essential that the literature review first draws out the definition and theory behind the term 'onsite learning process' and sets the contexts with regards to WHSs as learning resources.

2.2.1- Relationships between education and heritage

During the 20th century, the understanding of the concept and process of education has rapidly developed because of theoretical, technological, political and social developments. Consequently, the definition of Education has changed. As Fester (1987:85) recognises, there has been a semantic revolution, from Education to Learning, from "Education [which] implies a programme of instruction' to 'learning [which] implies an everyday activity".

Learning has been recognised as "both a process and an outcome- the process is about how we learn, the outcome is about what we gain from learning" (Black 2012:77), reaffirming Falk and Dierking (2000:9) who state that learning is both "a process and a product". Within the context of this transition, Bentley's (1998:44) definition of learning as "a dynamic process which is ongoing" will be adopted in this research. Whilst this definition recognises the experiential and lifelong nature of learning, the research foregrounds learning within the context of school visits.

2.2.2- Learning environments and relationships

Given the broad definition of learning, school visits/educational trips can considered part of formal learning. The definition of formal learning is taken from Bjornavold and Tissot (2000:204), "learning that occurs within an organised and structured context". This is expanded by Carver and Greaney (2011:15) who state that formal learning is "facilitated or self-guided learning activities that are usually linked to a taught curriculum in schools, colleges and universities". This includes primary, secondary and tertiary establishments- however the parameters of the research will be established in the methodology chapter. This is in contrast with, Informal learning, which in this research refers to engaging young people outside of formal education (after school, at weekends or during the holidays).

Formal learning has also been defined within the context of "captive audiences" (Ham 1992:2). Ham (1992:2) defines a "captive audience" as an "involuntary audience, time commitment is fixed, external rewards important, must pay attention, will accept a formal, academic approach, will make an effort to pay attention, even if bored". As illustrated by table 1,Ham's (1992:2) concepts of Captive and Non-Captive Audiences corresponds with the audience categories of

school group and informal visitors (Cessford 1989:18). Ham (1992:3) defines a Captive audience as an "involuntary audience, time commitment is fixed, external rewards important, must pay attention, will accept a formal, academic approach, will make an effort to pay attention, even if bored". This definition is important as it provides a conceptual framework for understanding the difference between the types of educational visitors and thereby differences in terms of the associated learning process. This concept of "captive audiences" is therefore linked to that of free-choice, as recognised by Falk and Dierking (2000:227) who note factors such as control, motivation and choice are limited during compulsory learning given the agency of the teacher and the curriculum requirements. This distinction was important to take into consideration during the development and analysis of the methodological framework as discussed in chapter four, in particular with regards to focussing the research on the formal learning process and educational visitors to the Ironbridge Gorge WHS.

Captive Audience / School Group	Non-Captive Audience / Informal Visitor
Controlled, formal	Uncontrolled- only by parents
Has preparation, backup and follow through	No formal preparation or backup
Each group shares similar characteristics	Each child vastly different background and experiences
Guide/presenter can be prepared for audience before	No knowledge of audience makeup before
School situation	Children relaxed
Children seldom have choice to be there	Children have greater choice to be there

Table 1: Table comparing the characteristics of Captive and Non-Captive Audiences. Source: Based on Cessford 1989:18 and Ham 1992:2.

As illustrated by figure 3, Ritchie and Coughlan's (2003:115) typology of school excursions provides a useful framework for understanding the educational visitors to the Ironbridge Gorge WHS. They can be categorised by curricula and non-curricula based visits, domestic and international visits and day trip and overnight visits. This typology will be used to inform the selection of research participants at the Ironbridge Gorge WHS, as will be discussed in the methodology chapter.

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                    ┌─────────────────────┐
                    │  School Excursions  │
                    │  (Curricula Based/  │
                    │ Non-curricula based)│
                    └─────────────────────┘
          ┌─────────────────┐       ┌─────────────────┐
          │    Domestic     │       │  International   │
          └─────────────────┘       └─────────────────┘
               ┌──────────────┐          ┌──────────────┐
               │   Day Trip   │          │   Day Trip   │
               └──────────────┘          └──────────────┘
               ┌──────────────┐          ┌──────────────┐
               │  Overnight   │          │  Overnight   │
               └──────────────┘          └──────────────┘
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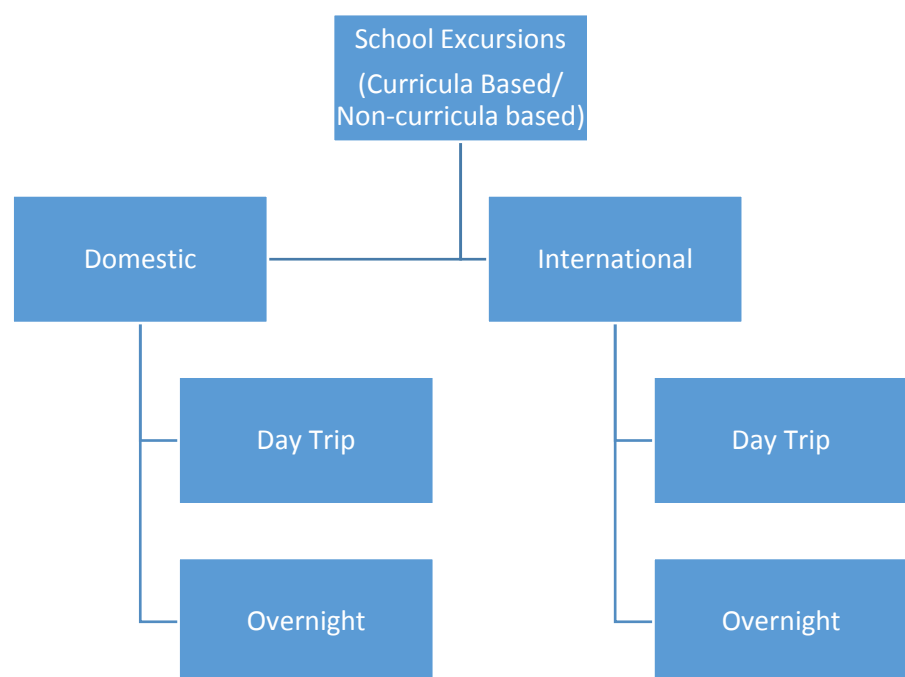
Figure 3: Typology of school excursions adapted from Ritchie and Coughlan (2003:115).

Educational visits can be understood to consist of three parts: "preliminary preparation, museum or gallery visit and follow-up work" (Hooper-Greenhill 1994b:120). DeWitt and Osborne (2007:686) stress that pre-visit orientation is important to reduce "the novelty effect" of educational visits, whilst classroom

based follow up activities, reinforce the learning experiences with the aims, outcomes and curricular links. This structure is essential in understanding the term 'formal learning process' and in defining the research parameters.

2.2.3- Relationship between learning and museums and heritage sites

WHSs such as the Ironbridge Gorge comprise multiple heritage sites and museums, therefore it is important to understand the broader value of learning within such environments, before considering if there are any added benefits from visiting WHSs. Research into museum education and heritage education has formed the basis of the literature review given the limited research into World Heritage Education. Museum education is generally considered as practice occurring within museums and based on artefacts and documentary resources, whilst heritage education is located within the built and natural environment which themselves are the learning resources. Following Griffin (1998:12), a museum will be defined in its broadest sense to include all forms of museums (science, art, natural and cultural history museums).

Veldpaus' (2015:146) definition of heritage as "all resources, tangible, intangible, movable, immovable, cultural and natural, and all the values they constitute" has been followed for this research. Van Boxtel *et al's* (2011:9-10) definition of Heritage Education demonstrates that learning from heritage is about both facts and feelings/behaviour, "an approach to teaching and learning that uses material and immaterial heritage as primary instructional resources to increase pupils' understanding of history and culture". It is about cognitive, affective and social development (Falk and Dierking 1992, Hooper-Greenhill *et al* 2004, Hooper-Greenhill *et al* 2006a, 2006b).

Museums since their inception have been the primary mechanism of engagement for educators, and as a result this is where research has primarily been focused. In 1988, Cooper and Latham (1988:255) concluded that "educational visits are an integral part of school life", a statement that remains true still today. Nearly twenty years after David Anderson's (1999) seminal research into learning in museums, Arts Council England (2016) published their review on museum learning, which is a useful contextual framework for this research. The review confirmed that "museum learning has a vital role to play in the cultural education of all children and young people", given that they are a "unique learning environment" (Arts Council England 2016:4).

The literature review revealed that most research on museum education is focussed on demonstrating the broad value of fieldtrips and learning outside the classroom or on evaluating the interpretative media and learning outcomes (Falk and Dierking 1997, CASE 2010, Newman *et al* 2010, Behrandt and Franklin 2014, Sutcliffe and Kim 2014:333). Educational visits support classroom learning and bring history to life, as Nathan (2014) states that "it is the application of a theory to a real-life situation that can be the final piece of a jigsaw, a visual cue that helps pupils make sense of a topic, which until that point was just another concept that had to be learnt".

Stancliffe (2014:24) recognises that "there is a long tradition in the UK of schools taking children on visits to local museums and using local historic sites to support their learning". The benefits of such visits are not new as demonstrated by Cannadine *et al* (2011:24) through early 20th century examples including a 1905 UK Board of Education recommendation that "Various aids... would enhance the

effectiveness of teaching including visits to 'historic spots' such as castles, abbeys, battlefields or hill camps". Jones (2014:16-17) recognises that through heritage sites, "the possibilities really are endless", however it is dependent on if the "schools, subject-interest groups and heritage are prepared to be creative, innovative and work together".

Despite the significant research into museum education, both Allard (1995:235-44) and Hooper-Greenhill and Moussouri (2001:25) propose that by comparison there is an absence of research around learning at heritage sites. Over recent decades, there has been more attention given to understanding the educational value of heritage sites and the associated pedagogical mechanisms and processes, examples of such research include Stone and McKenzie (1990), Henson *et al* (2004) and Corbishley (2014). Roche and Quinn's (2016) research at the Battle of the Boyne site and Zarmati's (2012) thesis on the educational programmes at selected Australian museums and heritage sites including the Port Arthur WHS are two of the most recent examples which have informed this research. This need for more research into the broader pedagogy of heritage sites reaffirms the importance of using the Ironbridge Gorge WHS as a case study to provide an insight into what actually happens when schools visit a WHS.

2.2.4- World Heritage Sites as resources for learning

WHSs as a distinctive learning resources have been widely acknowledged over recent years by researchers and practitioners from all over the world (Feilden and Jokilehto 1998:60, Corbishley 2014, Stone 2004, Logan 2010, Davies 2014). Smith (2003:110) summarises that they are "important for what they can teach local, regional and even international communities, not only about their past but also

their present and future". Despite this recognition, as with research into heritage sites more broadly, it is argued that there has been very few in depth quantitative and qualitative studies on the value and experience of learning within WHSs.

Site visits are the primary educational activity at WHSs. For example, periodic reporting of WHSs in Europe and North America revealed that school visits were "by far the most common activity" (UNESCO 2016b:47). Despite this, it also revealed that organised school visits were recorded as being often and occasional rather than being regular, which indicates that WHSs are not being fully utilised as learning resources (UNESCO 2016b:128).

As outlined in the introduction, there is a very limited range of published research on learning at WHSs and World Heritage Education as a pedagogy. McDonald (2013) remains the only academic research into the evaluation and curriculum mapping of World Heritage Education resources and Grünberg (2014) in researching evidence for the institutionalising of World Heritage Education in schools (ASPnet schools in Germany). These will be considered in depth later in this chapter.

Research by Logan (2010, 2013b, 2014), Logan and Wijesuriya (2015), Stone (2014c), Richon (2005) and Vujicic-Lugassy and Richon (2008) provide overviews of educational programmes by UNESCO especially the World Heritage Education Programme. In recent years, there has been an increase in academic research into the use of WHSs as classroom based learning resources especially through digital approaches (Sikora 2007, Ströter-Bender 2007, Tsai 2011, Iinuma *et al* 2013, Soos 2014, Lackovic *et al* 2015). Three areas of research where significant work has been undertaken, but the value of such research has gone under-recognised; is

site-led research (Carver and Greaney 2011, Kiddie 2014), consultancy based research (Scaife 2002, MingStones 2003, 2004, 2006, JWF: Museums and Heritage Consultants/ Scotinform 2012, Kell 2013) and teacher-led research (Bradley 2009, Cremin and Hackett 2009, Forrest 2010, Bernsen 2015a-c). This research is important as it provide evidence of the realities of practice rather than possibilities and theory. For this first time, it will consider at site level, to what extent World Heritage Values are embedded in the onsite learning process and if World Heritage inscription informs the onsite experience.

One important resource identified during the course of the literature review which demonstrates the value of WHSs as learning resources and provides examples of learning programmes and their impact comes from the UNESCO World Heritage Centre online archive. As part of the 40th anniversary of the World Heritage Convention in 2012, 23 submissions were received from States Parties for the Sharing best practices in World Heritage management initiative. The applicant WHSs had to demonstrate evidence of best practice including in education and interpretation programmes (UNESCO 2012). These applications further demonstrate the use of WHSs as learning resources and evidence of specific initiatives to enhance understanding of OUV amongst educational visitors. For example Monte Albán WHS, Mexico has had 1.3m educational visitors between 1997-2012 and 700 youth custodians, at the Cradle of Humankind WHS, South Africa, 1000 students each year from disadvantaged schools are funded to visit the site, whilst at the Teide National Park WHS, Spain, in 2010, 121 guided tours were carried out for 5,708 students and 318 teachers from 86 schools (UNESCO 2012).

UNESCO states that "all young people deserve to benefit from World Heritage Education and specially planned activities designed for them" (UNESCO 2004d:4). However, Logan (2013b:22) argues that engagement with young people has been "slow and patchy", whilst even UNESCO acknowledge that "Article 27 of the convention has not been used as extensively as might have been hoped" (UNESCO 2007:53). Primary and secondary school age children have been prioritised at site level educational programmes and by UNESCO World Heritage Education programme initiatives. One notable exception revealed during the literature review comes from Sweden, where since 2007 there has been a World Heritage Preschool for 1-5 years developed by the Tanum Municipality and the Vitlycke Museum (Vitlycke Museum 2015). The outdoor preschool is situated in the Vitlycke and Tanum Bronze age rock carvings WHS Museum at the Vitlycke museum with its reconstructed Bronze Age farm, with teaching staff and specialist educators each from different specialist fields- archaeology, ethnology and biology. The young children learn about the WHS through hand on activities and experiential learning within the WHS as well as through the development of an annual exhibition. This example reaffirms that learning is a lifelong process and that all WHSs have the potential to be a learning resource for all ages.

In the UK, a 2007 report on the costs and benefits of World Heritage inscription, recognised that the "WHS status is considered to be a tool for learning engagement" (PricewaterhouseCoopers 2007:6). Furthermore, a recent report by the UK National Commission for UNESCO on the value of UNESCO to the UK, concluded that "all UK World Heritage Sites interviewed have links to local schools, colleges and universities helping to provide a global dimension to the student's local heritage, supporting them to become responsible global citizens"

(UNESCO UK 2016b:28). However, McDonald (2013:276) concluded that "WHSs in England have adopted a rather apathetic approach to education with many showing little or no interest" in UNESCO's World Heritage In Young Hands (WHYH) resource especially. Through the case study of the Ironbridge Gorge WHS, it is hoped that the site level realities can shed light on these contrasting research findings.

Building on the literature review and as illustrated in Figure 4, WHSs as learning resources can be understood within four contexts. This framework is adapted from comparable models from the fields of education theory, environmental education, citizenship and archaeology (Scott and Oulton 1998:213, O'Neill *et al* 2008:1, Henson 2004b:24-25, Copeland 2006:17 and comparable with Delors 1996 'four pillar of education' and Ströter-Bender 2007's World Heritage 'Learning Paths'). For example, Henson (2004b:24-25) grouped the ways in which archaeology can be used to support learning in schools, primarily through learning about the past, learning from the past and learning to use the past. It is therefore proposed that these frameworks can provide a useful way to group the educational value and possibilities of WHSs:

- Learning in World Heritage relates to the fact that WHSs can be used as an outdoor classroom, and for field trips to the museums, heritage centres and natural/built heritage environment of the inscribed property.

- Learning about World Heritage relates to the fact that WHSs provide a resource to learn about their local, national and global archaeological and historical significance (OUV) - ascribed values, to be defined later in this chapter.

- Learning from World Heritage relates to the creativity and inspiration that WHSs can provide. For example, the artistic or creative responses to the heritage.

- Learning for World Heritage, is linked to both the global significance and human values, which will be defined later in this chapter. WHSs are resources for the promotion of conservation and peace through intercultural dialogue (shared culture and cultural tolerance).

Learning In	Learning About
Learning From	Learning For
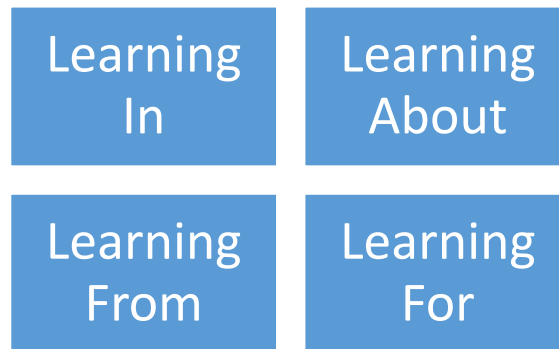
Figure 4: World Heritage Learning Framework. Source: Davies.2015.

Through the case study of the Ironbridge Gorge WHS, this framework has been applied to consider the extent to which the current onsite learning experience meets the potential of World Heritage Education. However, this is made difficult by the fact that "most UK sites were important educational assets long before they gained WHS status and the extent of the benefit in this area will depend on the extent to which the site can integrate the WHS status into learning activities and reach a wide variety of groups" (PricewaterhouseCoopers 2007:13). The Ironbridge Gorge is a good example of a site with a long history of being a recognised "educational asset". The following context chapter charts the

development of Ironbridge Gorge WHS as a learning resource and IGMT as a learning provider and support research objective 2. For the first time, this reseach will provide a site level understanding of the actual engagement with and the relationship between educational visitors and the WHS.

2.2.5- Relationships between the curriculum and visits to museums and heritage sites

One area of research which needs further discussion is the relationship between museums and heritage sites and the curriculum. The literature review confirmed that educational visits to museums and heritage sites are overwhelmingly motivated and linked to support curriculum based learning. For example, 94% of teachers surveyed by Hooper-Greenhill *et al* (2004:xvi) noted that their visits were linked to the curriculum. However, Kiesel (2005:940) identified that there is a complex series of non-mutually exclusive teacher motivations for museum educational visits, which include: to "connect with curriculum, provide a learning experiences, promote lifelong learning, foster interest and motivation, expose to new experiences, provide a change of setting, provide enjoyment or reward, and satisfy school expectations". Kisiel's (2005) research is an important conceptual framework, as whilst the curricular relationship between WHS's and onsite learning may appear dominant in this research, it remains part of a complex series of motivations and factors which result from the agency of the teacher. As will be outlined in the analysis chapters, the evidence from the lead teachers of the observed educational visits to the Ironbridge Gorge is one which supports Kisiel's conceptual framework and reveals differences in the visit motivation.

Table 2: Conceptions of Curriculum Connection. Source: Kisiel 2005:950	
Approach	Description
Curriculum-related experience	Students gain "hands-on" experience related to curriculum
Curriculum-related learning	Students gain content knowledge related to the curriculum
Connection to language skills	Students utilize language skills in an interesting real-world setting
Point-by-point connections	Students are directed to see how different aspects of the museum relates to different parts of the curriculum
Curriculum unit integration	Museum experience is an integral part of a particular topic currently being studied in class. The experience is directly related to current activities or projects
Curriculum unit introduction/review	Students are introduced to a curriculum topic they have not yet begun in class; students are reminded of a curriculum topic they have already finished
Implicit/opportunistic connections	Students naturally relate their museum experience to their classroom experience

Table 2 - Kisiel's (2005:950) categorisation of the relationship between the curriculum and the field trip will provide an important framework for analysing the use of the Ironbridge Gorge WHS by educational visitors.

Thijs and Van den Akker's (2009) research into curriculum theory provides a theoretical framework which explains the variations and accounts for the variables at a national, local (school) and individual (learner) level. Thijs and Van den Akker's (2009) understanding will be considered in relation to the educational users of the Ironbridge Gorge WHS:

- "the intended curriculum - consisting of a rationale which is the basic philosophy underlying a curriculum and the formal documents and/or materials;

- the implemented curriculum- the actual process of teaching and learning and the curriculum as interpreted by its users;

- the attained curriculum - the learning experiences as perceived by learners and the resulting learning outcomes of learners".

(Thijs and Van den Akker 2009 in De Groot-Reuvekamp *et al* 2014:489)

Given that the case study area is in England, all references to the educational landscape and curriculum relate to that of England. The intended curriculum in England is the National Curriculum, which was first introduced in 1988. However, as stated by Henson (2004a:23) "there is no national curriculum for schools in the United Kingdom. Instead, there are four separate curricula for the individual nations within the United Kingdom: England, Scotland, Wales and Northern Ireland". Since its introduction, the 'National Curriculum' has been subject to several major reviews and revisions entwined with political ideology (Cannadine *et al* 2011). As Hawkey (2014:176) recognises "the history curriculum is always a site of contestation and a curriculum can never stand still for long". For example, the last major revision of the curriculum in England came into effect in 2014 (Department of Education 2014d- Summary in Appendix 1).

The variation between the intended and implemented curriculum is explained by Stancliffe (2014:25) who states, that "teachers face multiple pressures and juggle many competing demands on their time". As recognised by Suina (1994:263) "what classroom teachers and museum educators ultimately do depend upon their point of view, and their knowledge and ability to provide positive cross-cultural experiences and attitude for their students". McCrum (2013) and Harnett (2009) reaffirm that teachers play a key role in mediating the curriculum. Therefore, it is important that any research focused on the evaluation of educational visits consider the perspectives and influence of the teachers on the

onsite learning process. In the methodology chapter, this understanding will be embedded in the justification of the lead teachers as the primary research participants. It is important to reaffirm that the research focus is on lead teachers and in identifying the extent to which World Heritage Values are communicated within the implemented curriculum, rather than the intended curriculum (McDonald 2013) or the attained curriculum which would have been based on experience of the students themselves.

Museums and heritage sites therefore build their onsite learning programme around curriculum requirements and standards. As summarised by Zarmati (2012:165) "curriculum linking is the hook they use to market their programs to schools". Museum education and heritage education research has confirmed that history, followed by art and science and technology were the most popular curriculum subject areas for museum visits in England (Hooper-Greenhill *et al*, 2004 and 2006b). This is supported by later research (Kisiel 2005 and Anderson *et al* 2006:370) who confirmed that 90% of teachers surveyed stated that a connection to the curriculum was an important motivation for a visit. This research will consider to what extent being a WHS is a motivational factor and if the curriculum links are enhanced in relation to the World Heritage Values as a result.

2.2.6- Relationships between WHSs and the curriculum

As discussed, WHSs have been widely recognised as a cross curricular learning resource by many researchers and practitioners. UNESCO's expectations are clear, in that WHSs can be used 'across the curriculum (in as many subjects as possible, e.g. history, geography, language, science, mathematics, art) in order to involve

students more effectively in promoting and preserving World Heritage and in strengthening intercultural learning and dialogue'(UNESCO 2003b:29). World Heritage Programme Officer Richon (2005:54) reaffirmed the cross curricular applicability of WHSs as they are "well suited to build bridges across the curriculum in the fields of: art, foreign languages, history, geography, environmental sciences, literature, poetry, music, philosophy, religious studies and information and communication technologies", as is confirmed through the WHYH Kit (UNESCO 2002b).

In terms of specific research into this relationship, McDonald's (2013) curriculum mapping of UNESCO's WHYH educational resource and Davies' (2014) analysis of UK WHSs educational programmes, both importantly confirm the potential and reality of cross-curricular learning in relation the national curriculum in England. Unlike previous research, this research focuses on identifying the actual relationship between the onsite learning and the curriculum rather than possible links through curriculum mapping. Curriculum mapping could be regarded as an unnecessary exercise given the wide gulf between the intended and implemented curriculum as recognised by Thijs and Van den Akker's (2009).

In the UK, the 2008 consultation paper on UK WHSs by the DCMS, identified that World Heritage Education was a low priority as WHSs "are not specifically included within the National Curriculum, but most sites have educational material and outreach programmes. Some sites have run programmes with local schools" (DCMS 2008:15). As recognised by Norman (2009:8) the failure to include WHS in the (fragmented) National Curriculum has meant that "individual sites must tailor their education programmes to fit in with the Curriculum" which sometimes

results in "downplaying what it is that makes a Site outstandingly valuable". This contrasts with the obligations set out in the UNESCO Operational Guidelines for States Parties, which notes that they "are encouraged to develop educational activities related to World Heritage with, wherever possible, the participation of schools, universities, museums and other local and national educational authorities" (UNESCO 2005: para 220).

In addition to being recognised as a cross curricular learning theme, World Heritage Education has been proposed as a distinct curriculum theme. As noted by Fordham and Hollinhead (2002:13), there are "two ways it can be integrated into the school curricula- either as a theme in teaching a specific subject or as a transverse or cross curricular theme". World Heritage Education could therefore be regarded as an "issue-based education" as coined by Hicks (2007:5). Issue-based educations are "educational responses to global issues" (Hicks 2007:3), for example Global interdependence (Global Education), Environment (Environmental Education), Development (Development education), Peace and conflict (Peace education), Future (futures studies), Citizenship (citizenship studies) and Sustainable development (Education for sustainable development-ESD), have all emerged since the latter half of the 20th century. Richardson (1990 in Hicks 2007:6) argued that they could each be seen as parts of a greater whole and highlighted the danger of each field in trying to achieve its goals without reference to the others within an overcrowded curriculum.

UNESCO has argued that there is a need to "mainstream World Heritage Education in the curricula and in classroom teaching in all countries" (UNESCO 2004d:37-8). It is however unlikely that World Heritage like other 'issue based

educations' will become a standalone curriculum subject. Stone and Mackenzie (1990), Stone (2004:4-5) and Stancliffe (2014) identified barriers to 'mainstreaming' such topics due to overcrowded curricula, teacher experience, political interference, and the primacy of documentary over heritage resources to teaching. Only New Zealand has been successfully in integrating the WHYH syllabus into their National Curriculum (McDonald 2013:274).

Grünberg's (2014) research into the position of World Heritage within educational policy in Germany also provides rare and important insights into the realities of World Heritage Education at the national level. Aside from minor references in educational policy recommendations (Grünberg 2014:36), World Heritage as a learning resource and curriculum theme was absent in German educational policy (Grünberg 2014:36-7). Only two out of the sixteen federal states referred to WHSs (Grünberg 2014:37). Grünberg (2014:86) concluded that "World Heritage mostly serves as illustrative material for other topics that are determined by the framework curricula".

McDonald (2013) confirmed that UNESCO's WHYH resource supported the aims and values of the National Curriculum (2007 specifications) especially in terms of being cross curricular, supporting the 1972 Convention, communicating the OUV of individual WHSs and fostering universal human values linked to the history, geography and citizenship requirements. McDonald (2013:290) concluded that "the response of WHSs in England has remained unacceptably poor" with regards to using the WHYH syllabus to support teaching and learning.

An example of the failure to embed World Heritage in the National Curriculum in England was a failed Digital, Culture, Media & Sport (DCMS) backed initiative

'Making Sense off our World Heritage Sites' which aimed to "help the UK's World Heritage Sites make a contribution to the national curriculum's aim of helping children and young people explore identity, diversity and global citizenship" (DCMS 2010:23). Furthermore, in 2005, a national WHS educational kit was to be developed for the UK, however as McDonald (2013:261) notes it was "plagued by managerial decisions" and again this was never achieved. These recent attempts to embed World Heritage Education within the National Curriculum in England, are therefore comparable with Grünberg's (2014:85) findings from Germany, where she concludes that there has been a failure to "institutionalise World Heritage education in the German educational landscape".

World Heritage Education as an 'issue based education' therefore does not feature in the National Curriculum for England, however individual WHSs are promoted as featured case study sites for the history and geography curricula in England. For example, Jones (2014:16-17) includes WHSs in guidance on how to incorporate heritage sites into the new history curriculum. Stonehenge is given as an example of a case study for an enquiry-based approach, the Tower of London as a site to discuss and measure change over time, and Skara Brae to be used as part of a chronological understanding of the concept of homes. Notably the Ironbridge Gorge is suggested as a case study which can be "used to highlight specific turning points in history" (Jones 2014:16-17). This supports Grünberg's (2014:86) research in Germany which identified that "World Heritage mostly serves as illustrative material for other topics that are determined by the framework curricula".

This relationship between the curriculum and site visits is not just theoretical. The 2014 revisions has already led to an increase in educational visits to Stonehenge and other prehistoric WHSs and at Saltaire (Griffiths 2014) and the Vindolanda Roman Fort (Scott 2014) because of the local history requirement. This confirms Henson (2008:30) who proposed that WHSs should be utilised through group exercises based on a local case study.

A rare example of the implemented curriculum at the local level comes from a recent evaluation of the Jurassic Coast WHS school learning programme. It identified examples from over 30 schools where the WHS had become embedded within school curriculum development and delivery in core subjects (such as geography and science), with teachers using the local WHS as a case study rather than the traditional overseas ones, "providing their pupils with a strong sense of place" (Ford. N.d:4).

This overview demonstrates the disparity between the expectations and practice with regards to embedding World Heritage Education within the curricula at the global, national or local levels. It is important as it sets the framework for understanding the priority given the communication of World Heritage Values at the case study site due to the factors behind the intended, implemented and attained curricula.

2.2.7- Communicating the cross curricular opportunities for onsite learning at WHSs

Over the years' numerous World Heritage resources for classroom and onsite learning have been developed, based upon UNESCO guidelines (UNESCO 2004d). They have been developed to encourage schools to visit WHSs, ensure that

teacher's understand the concept of World Heritage and embed it within the learning process associated with educational visits/learning outside the classroom: pre-visit, visit and post-visit. Given the research focus on the onsite learning experience, there will be no detailed analysis of such resources. However, it is important to provide an overview to demonstrate the types of resources out there and the variables in their development and delivery.

The importance of these resources is widely recognised, for example by McDonald (2013:3) whose research into WHYH concluded that it it is a "much needed resource for subject teachers struggling to address the burgeoning demands of the revised national curriculum". This supports Grünberg (2014:50) who noted that there is a "lack of literature on World Heritage education, of guidelines for teachers and of material". However, through desk based research, it is clear that there are lot more resources developed by museums and heritage sites within WHSs and by teachers from local or visiting schools than first thought. These resources not only confirm the cross curricular opportunities for using WHSs but also demonstrate that World Heritage Values are being recognised and embedded within the resources.

Resources developed for Primary and Secondary Schools in Bath reaffirm the cross-curricular value, with activities linked to Citizenship, Information and communication technology (ICT), Science, Design and Technology, Art, Personal, social, health and economic education (PSHE) / Spiritual, Moral, Social and Cultural Development, Geography, History, Numeracy/Mathematics and English/Literacy (Bath Preservation Trust 2016a:8, Bath Preservation Trust 2016b:3). Whilst at the Jurassic Coast (Sutcliffe 2013), Cornish Mining (Smith

2015) and Hadrian's Wall WHSs, art and design has become an important focus. For example, the recent Wall Face resource developed for the KS3 art and design curriculum at the Hadrian's Wall WHS (Henderson 2015). This supports concept of 'Learning from World Heritage' as outlined in the World Heritage learning framework.

Resources developed by WHSs do go beyond the expected History and Geographic curricular links. For example through citizenship as evident by resources from the Jurassic Coast WHS and Bath WHS (McDonald 2013:252) and identity and multiculturalism at Hadrian's Wall WHS (McDonald 2013:255, Corbishley 2014:292). Furthermore resources developed by Bath WHS for Secondary school students' centre on Sustainability and the WHS, encouraging students to critically discuss the implications of development and the multiplicity of values (community values) in relation to the Statement of Outstanding Universal Value (Bath Preservation Trust 2016b). The development of such resources, supports the concept of 'Learning for World Heritage', part of the World Heritage learning framework outlined above, as they aim to foster human values, which will be introduced later in this chapter.

Despite the cross curricular rhetoric, as Hawkey (2014:165) confirms, "the whole National Curriculum in the UK remains a very subject-bound curriculum with consequently limited scope for serious inter-disciplinary work". Black (2012:113) identified that in the UK, "history remains the largest subject category for school visits to UK museums, with science and technology and art and design also important". However it is important that this curricular bias does depend on the type of heritage site, for example evaluation from the Jurassic Coast WHS

revealed that teacher training was "often limited to the Geography or Science department as the staff felt that the scope of the project had less cross curricular appeal in other subjects"(Ford n.d:3). The extent to which there is a disparity between UNESCO's cross-curricular ideal, the intended curriculum and the implemented curriculum at WHSs will be considered through the analysis of onsite learning at the Ironbridge Gorge WHS.

Grünberg's (2014) research provides a rare insight into World Heritage Curriculum links outside of England. History, Art and German, Social Sciences were the curriculum themes most linked (respectively) to World Heritage in Germany (Grünberg 2014:48). Grünberg (2014:51) proposes that "World Heritage is perceived as a canon of material art" which results in a "much a narrowed definition of World Heritage and its subject-related teaching (instead of interdisciplinary)" (Grünberg 2014:70). This undermines the learning framework introduced earlier in this chapter, indicating that learning at WHSs is more restricted and less cross curricular. The research at the Ironbridge Gorge WHS provides new datasets, the results of which will be discussed in the analysis chapters.

Finally, the uniqueness of WHSs to support the curricula due to their cross curricular applicability is to be questioned. Copeland (2006:18) proposes that heritage generally can become "a medium for cross-curricular work", however this is not new, as Dyer (1985:27) concluded that "there is virtually no subject on the curriculum which cannot benefit from a good heritage education resource". Furthermore, in Hennessey's (1975:34,36) paper on Industrial Archaeology and Education, he notes an example from a school in Hayle, Cornwall (now part of the

Cornish Mining WHS), where the local environment is a central theme of the curriculum, with Drama "employed to describe life in this mining and engineering centre…Mathematics, science and craft employ artefacts like the local swing bridge as resources in their various schemes of work". This questions to what extent becoming a WHS changes the educational experience (research objective 2), as the potential of cross curricular learning is there for both WHSs and non WHSs.

2.3-Heritage Sites and the onsite learning process

The first section of the literature review has defined the concept of learning, the relationship between museums, heritage sites and WHSs and education, the relationship between WHSs and the curriculum and the realities of the implemented curriculum. It is now important to understand the relationship between the onsite learning process and the pedagogy of museums and heritage sites. This pedagogical framework will be important to develop the methodological framework for the analysis of the onsite learning process at the Ironbridge Gorge WHS.

2.3.1- Heritage theory and the onsite learning process

Based upon the literature review drawn from heritage and museum education research, it is important to outline the theoretical framework for the concept of the 'onsite learning process'. The commonalities of this pedagogy are identified as student engagement with the Narrative Environment, through cognitive mapping and engagement based upon Novel Object Interaction Theory- concepts which will be discussed in this section. Learning is supported through mechanisms to

reduce the novelty effects and through joint productive activities. It is important to recognise the agency of the teacher and that formal classroom based approaches and mechanisms are also adopted within the informal learning environment of a museum or heritage site. By understanding the onsite learning process at the Ironbridge Gorge WHS, it will better enable an understanding of the extent to which WHSs provide a unique pedagogy.

Kallo (2016:12) proposes that "cognitive theories and constructivism have been ruling pedagogical thinking just as much in schools as in museums". Hein's (1995) constructivist understanding of the learning process is adopted for this research, one which follows Hooper-Greenhill's (2004) model of learning as a multidimensional process and Falk and Dierking's (1992,2000) Contextual Model of Learning. This replaces the traditional "absorption-transmission model" (Falk and Dierking 2000:150), with one which recognises that individual learning occurs through the identificaiton of an "entry point" or "hook", as "learners relate their previous experiences to this new one" (Falk and Dierking 2000:182). As summarised by Griffin (1998:102), "for learning to take place students need to be able to find and form links between new experiences and their existing knowledge".

Learning in its widest sense occurs through the process of interpretation at WHSs. Williams (2011:30) defines interpretation as "almost everything that is done in relation to the display and presentation of objects and spaces in the museum". As acknowledged by Falk and Dierking (2000:203), "learning experiences can and should happen throughout every part of the museum…think of the entire museum as a stage, a setting for transformative learning experiences". According

to Grinder and McCoy (1985:44), they are informal learning environments, where "learning occurs all the time, consciously and unconsciously, thorough observation, and experience". Kirk's (2014) term of 'narrative environment' will be used when discussing the above in relation to the research. It is important to therefore set out key heritage pedagogy concepts related to the onsite learning process which provides the framework for the research at the Ironbridge Gorge WHS.

Griffin's (1998:4) museum learning environment factor illustration (Figure 5) reaffirms the constructivist and contextual learning framework. Griffin's model is important for understanding the relationship between learning and Ironbridge Gorge WHS as a learning resource at the individual level.

read museum materials

visit museum before excursion

knowledge of museum content type of information available

preparation

comfort with learner-centred approach

learning approach used in classroom

TEACHER

amount of work done on topic prior to museum visit

personal views & experiences of museums

have a clear purpose for visit

previous excursion experiences

strategies used on visit

amount of work done on topic

motivation

experiences of museums with their families

LEARNING ENVIRONMENT

CHILDREN

education materials

curiosity about topic

prior school excursion experiences

education staff: knowledge skills attitudes

range of learning experiences available

MUSEUM

knowledge of type of information available

recognition of purpose of visit

learning ethos

physical facilities

participation in planning visit

types of displays and information available

Figure 5: Factors which may determine the learning environment for school groups visiting museums. Source: Griffin 1998:4.

One of the most useful ways of understanding learning in informal learning environments and 'narrative environments', is in seeing them "as a tapestry of light and shadow" (Kirk 2014:151). This theory developed for museum settings by Hooper-Greenhill (2007:38), based upon Claxton (2001:75) considers the "modes of attention" within the learning process as a metaphor of "spotlights". As noted by Hooper-Greenhill (2007:38), "the spotlight mode describes the way in which users of museums identify and 'home in' to study a group of objects, and/or when they have clearly identified objectives in mind". Kirk's (2014:151) research identified how "aspects of the museum that are salient to the children (light up

for them)" and how the saliency reflected the "depth of the interest in the museum and its objects (the intensity of the light)". It confirmed how these 'spotlights' were "directed by the children themselves" (Kirk 2014:159), personally driven by interest and experience but also by the type and properties of objects, resulting in conclusions that "one can imagine that each child is visiting a different museum, in which certain objects are brightly lit and others languish in the shadows" (Kirk 2014:151). This is an important framework for understanding the onsite learning process within the Ironbridge Gorge WHS.

Griffin (2012:116) recognises the "special opportunity offered by museums is the experiential nature of learning", which includes looking, questioning, examining and comparing (Sheppard 1993:47). As Zarmati (2012:18) notes "teachers take students to museums and heritage sites so that they can have learning experiences that differ from those in the classroom", experiential, observation-based and object based learning rather than classroom based document-based learning, which allows students to be "physically present in places of historical significance" (Zarmati 2012:15).

However, as recognised by Griffin (1998:297) "a major impediment to learning during school group visits to museums was that teaching strategies appropriate to a formal setting were being imposed in an informal setting". Robbins and Wollard (2005: 27) propose that it is because teachers "have not acquired the experience and confidence to employ alternative approaches". Robbins and Wollard (2005:59) state that "the pedagogic methods that teachers use in museums and galleries differ from those used by museum and gallery educators. Teachers use sketchbook and worksheet activities to record information, while museum and

gallery educators employ discussion and questioning techniques to help pupils to interpret exhibits". This understanding is important to factor when considering the onsite learning process and the pedagogies at the Ironbridge Gorge WHS.

Another key part of the onsite learning process within a heritage context is Hutt's (1981) Novel Object Interaction theory. Hutt (1981:276-7) concluded that learning about a new object occurs first through exploration then play. Through approaching, inspecting and investigating with the question "what does this object do?", interaction occurs through playful use with the question "what can I do with this object?" (Hutt 1981:278). This concept supports Marcus *et al's* (2009:55) 'Cognitive Mapping', it is where students…

> "Rush around and explore, apparently in random fashion, after about thirty minutes they can be observed to slow down and are more inclined to explore purposively. This 'mapping' appears to be of fundamental importance to children, especially in new physical environments".

(Marcus *et al* 2009:25)

Whilst the students themselves are not the primary participants of this research, as will be explained in the methodology chapter, it is important to include these theories within the literature review given their centrality in the onsite learning process at WHSs.

Finally, Joint Productive activities (DeWitt and Osborne 2007:690) are defined by DeWitt and Osborne (2007:690) as activities "which involves pupils working with each other and with the teacher towards an end product", often craft based

activities. As will be discussed in the context chapter, this learning approach is at the heart of the IGMT's learning programme (Appendix 2).

The pedagogical framework drawn from the literature outlined above is not only important for defining the research question concept of the onsite learning process, but also for analysing the extent to which World Heritage values are embedded within them, thereby answering research objective 1.

2.3.2-   Are there unique WHS Pedagogies?

Whilst the literature review has confirmed that museums and heritage sites have distinctive pedagogies which differ from classroom based learning, given the research focus on WHSs, it is important to consider if there are pedagogies unique to WHS. The literature review has outlined the relationship between the educational oppurtunties which WHSs can provide schools and the ways in which schools currently engage with them (site visits and the development of learning resources). This consideration forms the basis of research objective 3, 'to what extent does being a World Heritage Site inform the educational experience?', which the fieldwork at the Ironbridge Gorge WHS will provide an "ethnographic perspective of World Heritage on the ground" (Brumann and Berliner 2016) to determine this. In order to understand this, it is important to return to the three levels (Global/Site/School) at which World Heritage Education operates and in particular consider what they reveal about the existence of World Heritage pedagogies.

At the global level, since 1994, UNESCO has developed the World Heritage Education Programme (WHEP) and promoted the 'issue based education' of World Heritage Education. World Heritage Education is defined by UNESCO as "a

series of methods to develop interest and involvement among young people regarding heritage issues in general and World Heritage issues in particular" (UNESCO 2004b:70). Droste (2011:35) proposes that, given that it took over 20 years, "this important concern remained largely ignored during the first phase of implementation". Furthermore, Fordham and Hollinshead (2002:2) state that prior to the WHEP, "Article 27 of the World Heritage Convention was largely overlooked, and, there was little or no education in support of World Heritage".

UNESCO's World Heritage Education Programme comprise the World Heritage in Young Hands Kit (WHYH) (UNESCO 2002b), International Outreach Projects through the Associated Schools Project Network (ASP (net)) and the World Heritage Volunteers Conservation Projects. UNESCO's approach to World Heritage Education has been a Project Based approach with an emphasis on active conservation. This approach illustrates the 'Learning for World Heritage' concept within the learning framework discussed above. This approach was influenced by the work of the philosopher Freire (1970) and Delors' four pillars of education (1996), and is evident in the World Heritage Volunteers Programme structure. This is summarised by the pedagogical approach, "Acting Locally, Thinking Globally" (UNESCO 2000), which has been a core principle for World Heritage Education. Logan (2013b:35) proposes that these initiatives reflect the three challenges in World Heritage Education, "to encourage schools to integrate world heritage into the curriculum, to create new resource materials geared to elementary schools, and to provide for the sustained empowerment of young people". The extent to which these principles and the reach of UNESCO's global programme have been embedded or even reached the individual property is considered in the analysis chapters.

The *World Heritage in Young Hands Kit: To know, cherish and act- An educational resource kit for teachers* (WHYH) (UNESCO 2002b) is an educational resource for secondary school teachers. The resource was first published in 1998, following its origins at the UNESCO World Heritage Youth Forum in Bergen in 1995 (Stone 2015:7904-5). The resource which was developed by the UNESCO World Heritage Centre and the ASPnet was first piloted in 700 ASPnet schools in 130 countries (Fordham and Hollinshead 2002:20).

WHYH is one of the main tools of the UNESCO World Heritage Education Programme and reveals UNESCO's intended pedagogical content and approaches. The resource is cross curricular and designed to raise awareness of the importance of UNESCO's World Heritage Programme and support learning both in and out of the classroom. The resource takes an interdisciplinary approach to World Heritage Education and is based around five core themes: the World Heritage Convention, World Heritage and Identity, World Heritage Tourism, World Heritage and the Environment, and World Heritage and Peace. It uses creative and participatory methods of teaching, involving students in research, collecting and analysing data, role-playing and simulation exercises, information and communication technology, and through the promotion of well-planned field trips (Stone 2014b:28). Evaluation of the UNESCO World Heritage Education Programme by Fordham and Hollinhead (2002) revealed that the WHYH resource was positively received by students and teachers in the pilot schools. For example, out of a sample of 128 teachers in 35 countries, (Fordham and Hollinhead 2002:33), 94% "reported that students showed a significant change in their attitude towards heritage matters, as well as an increased awareness of the need to protect it and of its link with their cultural identitiy". Stone (2014b:27)

concluded that the kit, is 'interactive and provocative' and notes that 'each section of the Kit encourages children to acquire not only new knowledge, but also to develop new skills and adopt new attitudes regarding the four topics'.

Whilst not all of Fordham and Hollinhead's (2002) reccomendations for the World Heritage Education Programme were adopted, those relating to WHYH were, and as a result an online version was released in 2002, and it has been translated into 43 langauges (as of 2018). Stone (2014c:7905) records how 'an estimated 57,000 copies have been printed and distributed' primarily through the UNESCO ASPnet Schools. Schools have tested and adapted the resource to meet national and local needs especially in terms of meeting curriculum requirements (for example in Cuba and New Zealand), however the challenge for universal awareness and intergration of this resource into the implemented curriculum is the everchanging intended curricula. As the research from the Ironbridge Gorge WHS will indicate, UNESCO's global level initiatives and resources do not appear to be filtering down to the national, site or school level.

The importance of the delivery of World Heritage education at site level, rather than at State level is recognised by UNESCO, who note that "because elaboration of school curricula can often be a long and tedious process, it is important to propose an integrated education to World Heritage properties, through the World Heritage Education Kit for example" (UNESCO 2004b:70-71). This is important, given that WHYH is aspirational and like Badran (2010:180) who revealed that in the case of Jordan, ministers and education departments did not know about UNESCO's World Heritage Education resources, research from the Ironbridge

Gorge WHS will reaffirm that such reseources are not filtering down to site or school levels.

At the Karlskrona World Heritage Youth Forum in 2001, WHSs were recognised as "a pedagogical tool" (UNESCO 2001). Furthermore, the Bratislava Declaration, the Recommendations from the First Central European Meeting reaffirmed the existence of a World Heritage pedagogy (UNESCO 2002c). For example, it states that WHSs "set standards of educational approaches for other heritage sites" (UNESCO 2002c). This should be understood as an aspirational statement however, given that museum and heritage education standards have developed outside the World Heritage framework at a national level for example in England by Historic England's education team and at site level, as recognised by the Sandford Awards for Heritage Education.

The literature review does reveal evidence of commonalities in the delivery of World Heritage Education at site level especially in terms of required infrastructure and management approaches. At site level in the UK, for example, the 2007 report on the costs and benefits of World Heritage inscription reaffirms the importance of the inclusion of learning strategies within WHS management plans, given that current practice is "patchy" with some sites including "interpretation, learning and educational strategies and linked these to specific outcomes and objectives, others have just provided simple plans" (PricewaterhouseCoopers 2007:9). Davies (2014) provides a rare analysis of WHSs management plans and confirms that UK WHSs have long standing and popular onsite learning programmes and that educational strategies were deeply embedded within the case studies researched.

In Fielden and Jokilehto's (1993:101) World Heritage management manual they note that "school parties should be assembled and briefed about the site in an area set aside for the purpose, preferably indoors. Staff instructors can help the children's own teachers explain the heritage site, and it is a help if visiting teachers can be invited to see the site and be briefed in advance of the parties they are bringing. The availability of educational materials for teachers would be useful in this context". Onsite educational space, educational resources (pre-visit, onsite and post-visit) and pre-visit orientation/CPD for teachers are therefore essential mechanisms for World Heritage Education. The importance of these have been widely confirmed, most notably by Cremin and Hackett (2009:4) who consulted with trainee teachers, who identified the need for "accessible, relevant learning resource pack for use in schools, WHS site learning coordinator/ key contact to support visit planning and a learning base for site visits". Cremin and Hackett (2009:8) and Kell (2013:34) also confirmed the importance of downloadable online resources and primary source materials for classroom and onsite learning activities.

The research into learning at WHSs, reveals that distinct pedagogies are evident in relation to UNESCO's World Heritage Education programme, however at site level the pedagogies reflect those of any other museum and heritage site. It is important therefore to consider what makes a WHS unique, to define the concept of World Heritage Values which are at the core of the WHSs as learning resources and the 'issue based education' of World Heritage Education. Through a literature review of this area of research, it may reveal if there are other pedagogical approaches to communicating World Heritage Values. This final section of the literature review will provide an overview of the concept of World Heritage Values

in relation to World Heritage guidance, practice and theory, which is the focus of the research.

2.4-World Heritage Values

2.4.1- Defining World Heritage Values: Outstanding Universal Value

At the core of UNESCO's World Heritage programme is the concept of Outstanding Universal Value (OUV) captured through a Statement of Outstanding Universal Value (SOUV). Born out of the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage, OUV is justified by the inscription criteria (Appendix 3). It is important to deconstruct this concept based upon an analysis of the extensive research around it, to fully understand it, given that it is at the heart of the concepts of World Heritage and World Heritage Values.

Schmutz and Elliott (2017:141) propose that "the actual process of articulating and verifying OUV is anything but straightforward, and certainly leaves room for a variety of interpretations". Meskell (2018:125) has called it a "rather mystical quality", which for the past 40 years has resulted in polarising debates in World Heritage Committee meetings when discussing sites to be either listed or delisted.

Between 1977 and 2008, there were 12 different versions of the criteria (ICOMOS 2005:75-8) and as recognised by Cameron (2016:323) "although used thirteen times in the World Heritage Convention, the term [OUV] is not defined". It was not until 2005, when the term OUV was defined....

"Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity"

(UNESCO 2015 para 49).

Research into the origins of the concept of OUV (Titchen 1996 and Labadi 2005, 2013) provides an important insight into the development of the concept. Draft versions of the Conventions refer to sites of "world-wide importance" and "of universal interest" (Labadi 2013:26), however the term 'Outstanding Universal Value' was adopted in 1972, with the inclusion of the word 'Outstanding' to help limit the number of potential sites for inclusion (Labadi 2013:27).

The concept of OUV is not new, as Shackley (19998: xiii) and Droste (2011:26) draws comparisons with that of the Seven Wonders of the Ancient World. However, as Labadi (2005:30) concludes, the downside of this is that the "biases in the inscription are based on a narrow understanding of sites…. Grand monuments of ancient civilisations". This notion of the inscription of sites of "world-wide importance" and "iconic sites considered to be the best of the best" (Titchen 1996:236, Shalaginova 2012:6), is critiqued by Labadi (2013:53), within the postmodern and postcolonial understanding of heritage, in which she rightly questions, the best "to whom".

In 1994, UNESCO launched a Global Strategy to address the imbalance between sites in developed and developing nations and thematic gaps on the List (ICOMOS 2005, UNESCO 2016c). This has had implications for interpreting the concept of OUV, as it is now understood as a "combination of the unique and the representative" (Titchen 1996:240). Cameron (2016:323) recognises that the

concept "is not static" and it has evolved due to changes in the criteria and "precedent-setting committee decisions". As summarised by Morris (2016: i), the shift in interpretation of OUV has resulted in the World Heritage List developing from "the best of the best…towards a greater emphasis on representation across regions and cultures of the world". This is evident in the character of the current WHS list and national tentative lists, for example a recent report by U.S ICOMOS is dominated by "representative sites" (US/ICOMOS 2016). Morris (2016: i) proposes that in the inscription of "representative sites", the OUV or "global significance is less readily apparent to the layperson", thereby questioning the 'universal value' of such sites.

Schmutz and Elliot (2017:153) through their analysis of nomination evaluations by UNESCO's advisory bodies tracked a change in the understanding of OUV, as "the most 'obvious' (or renowned) sites were inscribed early on, so longer evaluations were necessary to justify the relatively obscure sites in later years". Schmutz and Elliot (2017:153) contrast the current scientific rationalisation of OUV with the ICOMOS evaluation report for the Kremlin and Red Square tentative WHS in 1990 which noted that its "aesthetic quality and historic importance are so obvious". Whilst Meskell (2018:72) cites the 1979 nomination dossier for the Giza pyramids which stated that "the exceptional historic, artistic and sociological interest of these monuments needs no commentary".

The debate around the concept of OUV demonstrates the complexity its definition and interpretation, because of this and given the research question, it is necessary to further specify the values associated with WHSs and the World Heritage concept given the research question focus on the communication of these values.

2.4.2 - Defining World Heritage Values: Values and Heritage Values

Miller (2008:1123) proposes that "the word [value] is used by more or less everyone at more or less any time" and that it "has a rather extraordinary semantic range in the English language". In the Oxford Dictionary (Oxford University Press 2015), Value is defined as "the regard that something is held to deserve; the importance, worth, or usefulness of something". Whereas Values are defined as; "principles or standards of behaviour; one's judgement of what is important in life" (Oxford University Press 2015). It therefore is important to define the concept of World Heritage Values based upon this dual distinction.

-Ascribed Value

The concept of Value is derived from an economical perspective. It is not inherent but extrinsic, the value which is attached/ascribed to a commodity. This is supported by heritage theory, and the understanding of heritage values. A values-led approach to heritage management has been dominant since the 1979 Burra Charter (ICOMOS Australia 2013), for example Mason *et al* (2003). Reaffirming the position of Ascribed Values within heritage, Kirshenblatt-Gimblett (2006:193) proposes that they are "values that people actually attach to heritage goods", whilst English Heritage (2008:72) define it as "an aspect of worth or importance, here attached by people to qualities of places". Building on Veldpaus' definition of heritage introduced earlier in this chapter, Veldpaus (2015:146) goes on to summarise heritage as an "attribute- and value-scape" resulting from the process of "a layering of attributes and values". This is discussed further through illustrating the heritage value of the Ironbridge Gorge WHS in the context chapter.

Within the understanding of heritage, Value can be ascribed through "nested scales" (Sodikoff 2012:26), for example, heritage can be personal, local, national, global (Timothy 1997:752), with the value process being multivalent and polysemic. As illustrated by figure 6, this understanding of heritage values, mirrors that of human values as recognised by UNESCO. Falser (2010:19-20) recognises that heritage objects/sites are "containers of layered memory". Labadi (2005:95) recognises that "Values change according to particular cultural, intellectual, historical and psychological frames of reference held by specific groups and evolve with time". UNESCO (2013:27) recognises the challenges of polysemic ascribed heritage values, as they note that they "depend on the social groups that participate in ascribing them and they can change over time...There will sometimes be conflict between the different heritage values attributed to a property and it will be necessary to decide their relative priorities".
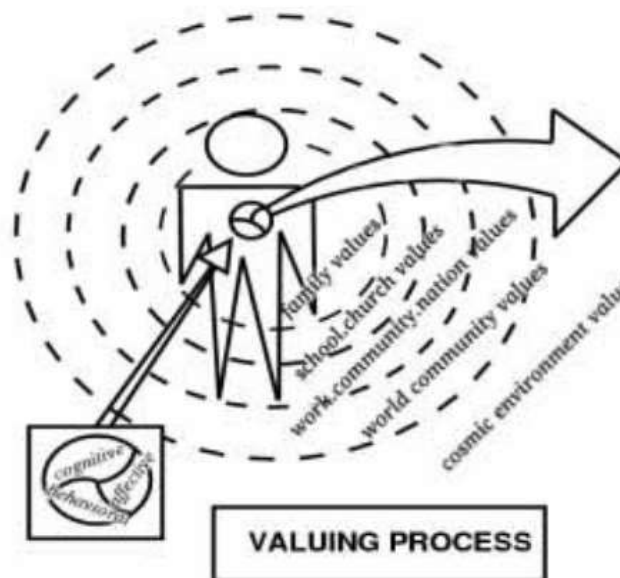
Figure 6: The Valuing process as illustrated by UNESCO, reaffirming the nested relationship of Values (UNESCO 2002a:13)

-Human Values

Following the distinction between Value and Values, in addition to ascribed values, the existence of Human Values is also proposed in relation to World Heritage Values. The concept of values derives from the philosophical Value judgments (Halstead 1996:5). Termed "Proscriptive Beliefs" by Rokeach (1973:7), they are "beliefs about desirable goals and modes of conduct" (Rokeach 1979:41). These Human Values can be viewed as absolute, objective and immutable (Jahanbegloo 1993:45, Stanford Encyclopaedia of Philosophy 2014). Heritage can therefore not only be a medium for ascribed values but also to symbolise and foster human values. This is summarised by Turtinen (2000:7) who defines WHSs as "symbolic anchors that epitomize humankind as one overarching and all-encompassing community, its historic and present relationships, and content", whilst Beck (2006:523) proposes that the "universal' significance is in that they 'transcend national identities".

For this research, there are to be recognised Universal Values which are selected and prioritized within socio-cultural frameworks (Rokeach 1973:5, Cairns *et al* 2000:168, Cummings *et al* 2001 and Reisinger and Turner 2011:87). However, it is important to recognise that the concept of absolute and objective universal values is widely debated amongst researchers from across disciplines and is increasingly being challenged. For example, Cultural Relativism (Le Roux 2004:42, Grever 2012:88) and Globalisation (Baudrillard 2004, Matsuura 2004) are challenging the universality of these concepts.

In recognising that WHSs encompass both the values of heritage significance and the broader values which reflect UNESCO's goals and beliefs, for the purpose of

this research a new definition of World Heritage Values is to be used. World Heritage Values is to be defined as the collective term for both the ascribed values as recorded in the SOUV and human values primarily those of Peace and Cultural Tolerance which each UNESCO WHS can be understood to be associated with. This way of understanding World Heritage Values is supported by Bentrupperbäumer *et al* (2006:730) who propose that WHSs have "specific referents (denotative meanings) and categories of associations (connotative meanings)". Austin (2012:112-3) defines denotative meaning as "the literal meaning of the text, image of space", whilst connotative meaning is the "associative meaning of the text, image or space". It could be argued therefore that the ascribed values and OUV attributes are the denotative meanings, whilst human values and the narratives are the connotative meanings of WHSs.

2.4.3- Ascribed World Heritage Values

Beck (2006:522) reaffirms that World Heritage as with Heritage more broadly, represents "the attitudes of the particular time, place and perspective". The heritage undergoes a process of selection of values and attributes. For WHSs, the values and attributes are recorded through a Statement of Outstanding Universal Value (SOUV) (UNESCO 2016b:24). Since 2007, SOUV's provide "a clear 'profile' outlining what constitutes its OUV, from its components and attributes to its relevance for all of humanity and to detail the processes in place to preserve the property" (UNESCO 2016b:24). These ascribed values become prioritised through inscription, as a site moves from being of national significance to one of global significance. For example, Mason *et al's* (2003:31) research into the values of the Hadrian's Wall WHS, identified that "by adding an explicit layer of universal value,

World Heritage status continues the decades-long evolution of the understanding and management of the Wall and its landscape".

This prioritisation and fixing of ascribed values has been widely criticised, most explicitly by Sullivan (2004:51) who stated that, "World Heritage is a global concept and process imposed...It is imposed from above – a submission by a national party to an international committee with the aim of achieving recognition of a value of universal significance". Turtinen (2000:4) also concludes that "World Heritage is created through highly standardised, transnational processes and procedures based on expertise".

Labadi (2013) argues that the SOUV is a result of the Authorised Heritage Discourse (Smith 2006) and the promotion of objective Western values designated by experts. These were a narrow selection of ascribed values- notably architectural (monumentality), aesthetic (beauty) and historical (the Great Men of history) values. This confirms the research of Petzet (2008:315-21), who defines three groups of values to which inscription criteria constantly refer to: historic value, artistic or aesthetic value and scientific value, as defined in Article 1 of the UNESCO World Heritage Convention. This process of selection has been widely criticised by academics as being Eurocentric and a product of colonial bias, for example, Cleere (1996:230) and Meskell (2002:568).

This process of 'imposing' values has been widely documented. Sullivan (2004:53) proposes that UNESCO is "attempting to assert the primacy of World Heritage values by ignoring or denying other valid elements of cultural significance". Pendlebury (2009:160) provides an example of Liverpool WHS, where "slavery was not ignored but compartmentalised", whilst at the Giant's Causeway there is

a tension between the geological OUV and the mythology values which have a high level of awareness (Cameron and Rossler 2013:60). There are numerous examples of the selection of values and the prioritisation of a universal narrative and values. Di Giovine illustrates this "global reframing" and "contestation" through the examples of My Son and Hiroshima (Di Giovine 2009:123,127-8). Other examples identified by researchers include Bikini Atoll (Brown 2013), Ellis Island (Beck 2006: 523,531), Komodo (Plannel 2013), Angkor Watt (Sullivan 2004:52, Winter 2007), Goreme Open Air Museum, Turkey (Tucker and Carnegie 2014) and Java (Salazar 2012). It is important to understand this when considering what is being communicated within the onsite learning process and when identifying to what extent World Heritage Values are being prioritised.

This understanding of World Heritage Values supports Ronström (2014:15) who argues that "Outstanding Universal Values are, despite being aimed to come across as such, not inherent in the sites from start, but added during the nomination and production process". In light of this, Derrida (2002:21), argues that "despite UNESCO's constitutional commitment to upholding the 'idea of equality', 'universalism', and 'world culture', it has resulted in a very different scenario of unequal participation, voice, power and representation". Meskell (2014:211) concludes that States are "using global patrimony as a pawn" for national agendas. De Cesari (2010:300,303) has coined the term "contaminated universalism" in discussing that nation-states have "vernacularized the universalizing project of World Heritage". Meskell (2016:75) illustrates this through the example of the inscription of Myanmar's first WHS, the Pyu Ancient Cities in 2014, where she notes that "most world heritage committee members spoke about the Pyu Cities being important because it was Myanmar's first world

heritage nomination, rather than addressing the archaeological merits of the site". Meskell (2018:132-133) notes the comments of a young Ethiopian delegate at the 2016 World Heritage Committee meeting who said that "sometimes the document on the table is the Convention, but the document in action is politics". This has implications for communicating the inscription to educational visitors, as if the site is designated for political reasons and not as a result of a strong SOUV based upon the programme criteria, how can this be concisely and clearly communicated to educational visitors?

The literature review has therefore suggests that Ascribed World Heritage Values as defined in the SOUV are a result of the widely-critiqued nomination process and based on the imposition of a narrow set of heritage values relating to the programme criteria. It suggests these ascribed values may relate more to the contemporary politics rather than the historical values. The context chapter will use this framework to illustrate the Ascribed World Heritage Values of the Ironbridge Gorge WHS.

2.4.4- Human World Heritage Values

Labadi (2013:11) argues that the intrinsic value of UNESCO World Heritage is that "sites are so exceptional that they can be equally valued by all people around the world and, therefore, must be protected for mankind as a whole". Furthermore, Rakic and Chambers (2008:147) have concisely summarised the human values that form the basis of World Heritage Values, "the concept of World Heritage is based on the idea of 'outstanding universal value' where sites are perceived as symbols of the 'common identity of humankind'", as is communicated explicitly on WHS commemorative plaques (Figure 7). The Operational Guidelines confirm

that these plaques as well as the UNESCO logo and World Heritage programme emblem are designed to inform the public that "the property is exceptional, of interest not only to one nation, but also to the whole world" (UNESCO 2015:para 269)

Figure 7: World Heritage Inscription Plaque at the Humayun's Tomb WHS, Delhi, India.

Transcript: A World Heritage Monument / Humayun's Tomb/ Humayun's Tomb has been inscribed on the World Heritage List of the convention concerning the protection of the world cultural and natural heritage/ Inscription on this list confirms the exceptional universal value of a cultural or natural site which deserves the benefit of all humanity.

Source: Author. 2015.

Human values are not just implicit in the OUV inscription process and through UNESCO's rhetoric, but there are an increasing range of WHSs where the human values are more explicit. ICOMOS (2008) and Labadi (2013) conclude that OUV should be defined beyond a nationalistic interpretation and Art-Historical Values; resulting in greater opportunities for peacebuilding and intercultural learning (Labadi 2013:57). Sites of Dark Heritage such as the Hiroshima Peace Memorial (Labadi 2013:57,67), the cooperation at the Kaesong WHS, inscribed in 2013 between North and South Korea (Choi 2015) and the increased number of tentative and inscribed Transboundary WHSs (UNESCO 2016d) does "promote ideas of a shared and common past and the legacies between nations" (Labadi 2013:150).

Maddern (2005:31) through the case study of the Statue of Liberty, Ellis Island, describes WHSs as Heterotopic spaces. They are "contested spaces" where "many actors project their ideas about society, their utopias, through its space". Maddern (2005:32) believes that WHSs can and should become "spaces of intercultural dialogue". She argues that WHSs "should aim to promote themselves as transnational rather than national spaces of citizenship" (Maddern 2005:32). Given that WHSs are sites of 'shared heritage' and a global microcosm due to the breadth of visitors that are drawn to them, as proposed by Kirshenblatt-Gimblett's (2006:162-3), WHSs have the ability to model "peaceful coexistence based, at the very least, on tolerance of difference and, at best, on bequeathing the fruits of cultural diversity to humanity". Staiff (2013:156) argues that such "commonalities permit 'conversation', WHSs through this 'cultural overlap produce a space for conversation".

With regards to World Heritage Education, there is an increasing rhetoric about the explicit educational role of WHSs to communicate human values. The core principle of World Heritage Education is linked to the UNESCO aim of 'peace in the minds of men and women', as UNESCO emphasise the importance of education in strengthening cultural identity and fostering cultural diversity and intercultural dialogue – the human world heritage values (UNESCO 2004d:6-7). UNESCO aims "to inspire young people to become Patrimonitos, young heritage guardians committed to working together to protect and promote our local, national and World Heritage" (UNESCO 2004d:4). As Logan (2013b:32) argues, "children play a fundamental role as the bearers and transmitters of cultural values from generation to generation". This illustrates the concept of 'Learning for World Heritage'. Lackovic *et al* (2015:332) discusses the role of heritage in education as "connective tissues" between the global and the local, whilst Turtinen (2000:19) recognises that Heritage Education "contributes not only to the preservation of the sites, but also to the fostering of a culture of peace and intercultural tolerance".

The human values of World Heritage are common in UNESCO's rhetoric, as stated at the 2013 General Conference, "UNESCO, in the minds of millions of people around the world, represents a vision, an idea, often embodied in such symbols as the World Heritage Brand" (Meskell 2014:218). Labadi (2005:26) proposes that UNESCO and the World Heritage Committee are standard-setting authorities which "proclaim certain values and set the terms of international (and national) debates". Albert (2013:17) reaffirms that World Heritage is part of "UNESCO's larger objectives include creating world peace. To this end the World Heritage

Convention is complemented by other legal instruments created by the international community- means to an end".

However, UNESCO'S World Heritage Programme has been widely critiqued as "a creature of its time, a modernist creation" (Logan 2010:40), "a 'Eurocentric system" (Labadi 2005:15, Elliot and Schmutz 2012:256) and "a monolithic or overbearing international structure" (Askew 2010, 22). The global narrative is driven by a modernist philosophy, the concept of Universality, shared humanity and positive Human Values at its heart (Labadi 2005:79,96,99, Lowenthal 1998). Finn (1983:41) argues that the spirit of the UNESCO convention derives from the Enlightenment philosophy of Western political, intellectual and moral values; democratic, rational, optimistic, humane, tolerance and freedom. Di Giovine concisely states that "UNESCO is predominantly a western cultural construction", and originated from the post war vision of UNESCO, for a "a unique global peace-making endeavour fostering 'peace in the minds of men' through a ritual re-appropriation of tangible monuments" (2008:33). The Human Values themselves have been critiqued as Askew (2010:20) proposes that UNESCO's values are based on "laudable universalist ideals", whilst Turtinen (2000:7) concludes that it is idealistic, contradictory and hypocritical.

Recognising this the distinction between ascribed and human world heritage values is important for this research as it allows for the recognition that research participants may identify the ascribed values of the WHS, but not relate it to the deeper human values which UNESCO hopes individuals will also internalize. Moulin (1990:3 in Timothy 1997: 752) proposes that visiting WHSs "is a way of appreciating universal civilization and achieving some degree of human unity",

this research therefore attempts to address if these human values are communicated to educational visitors during visits to the Ironbridge Gorge WHS.

2.4.5- Communicating World Heritage Values

At WHSs, interpretation and interpretative media are at the core of the process of communicating World Heritage Values. Silberman (2012:251) proposes that at WHSs, interpretation provides a "deliberative discourse" which provides "pre-packaged experiences and authorised narratives and facts". WHSs can be interpreted directly through interpretative media (text panels, signage, exhibits, interactives, guides) but also indirectly through museums and increasingly World Heritage specific visitor centres (Ripp 2016). Lochrie (2016:1403) outlines further WHS engagement strategies based upon evidence from UK WHS managers. These include online presence (dedicated website and social media), organised events, community projects, publications, branded signage and educational materials.

Hazen (2008) provides a rare insight into the relationship between communicating the World Heritage values and interpretation. Hazen (2008:261) identified that forms of interpretative media used including a visible commemorative plaque (figure 7), a brochure, description within a broader publication, a radio message, inclusion on interpretative display boards, visitor centre exhibition and special World Heritage events which were however "erratic" and tangential.

This identification of mechanisms to communicate World Heritage Values is comparable to those identified by Ringbeck (2008:45-47): publications, internet (on site website), commemorative plaque, Information signs (tourist signs and welcome signs), learning programmes and exhibitions. Periodic reporting

identifies guided tours, information materials, trails/routes, visitor centre, site museum, transportation facilities and information booths as "means of educational and information awareness raising" (UNESCO 2016b:78). Hazen and Ringbeck's frameworks of understanding interpretative media at WHSs is the basis for analysing the communication of World Heritage Values at the Ironbridge Gorge WHS, as is to be discussed in the Context chapter.

In 1998, design and location requirements of commemorative plaques and use of the World Heritage emblem were included within the Operational Guidelines (UNESCO 2013a:258-279). As recognised by Wuepper and Patry's (2017:19), aside from this there are no other formal interpretative requirements. Wuepper and Patry's (2017) TripAdvisor survey of 320,000 visitors to 791 WHSs, identified trends in the communication of World Heritage through site branding. It identified that the more rural, better state of conservation and with fewer visitors were the sites most likely to have a high World Heritage visibility. Urban sites, with high visitor numbers and some of the earliest inscribed properties were found to have scored lowest, for examples the 'Paris, Banks of the Seine' WHS (ibid).

Investment in interpretative media and in communicating World Heritage Values can led to a demonstrable increase in public awareness and understanding. For example the £2.4m investment in visitor destination facilities and marketing between 2010-2014 at the Cornwall and West Devon Mining WHS, led to an increase "from 14% to 32% of visitors who recalled seeing world heritage specific information", an increase in WHS status as a visit motivation and increase in visitor understanding of industrial heritage in relation to the World Heritage Values (Cornish Mining World Heritage 2014:8).

Di Giovine (2009:71,90) proposes that through the above interpretative media, UNESCO aims make the sites 'Universal', as they are presented with standard global tourist infrastructure and UNESCO branding, as selective narratives are chosen, universal values prioritized and common terminology is used. Turtinen (2000:13) has referred to this as "the universalising and standardising processes in the World Heritage system of common difference". However, Periodic reporting from the second cycle in Europe identified that the presentation and interpretation of the OUV is "inadequate or could be improved" at more than 75% inscribed properties (UNESCO 2016b:78).

Hazen (2008:261) demonstrates this low prioritisation of the communication of World Heritage Values through the case study of the Grand Canyon National Park. Hazen (ibid) cites from the Periodic Report for the WHS, which states that the "designation is mentioned regularly and prominently in publications, press releases, exhibits, interpretive programs, school programs, websites, and management documents", however 54% of surveyed visitors were unaware of the sites' World Heritage Status. Worryingly World Heritage was seen "as specialist information to be provided when requested rather than as part of broader education campaigns". Hazen (2008:260-1) notes how some sites go as far as "benign neglect" of the World Heritage narrative and values as they purposefully "downplay" it in onsite interpretation. This was evident in the responses from staff at American WHSs who noted that in terms of World Heritage inscription "the only physical evidence you see is a plaque…We don't hide it, but we don't play it up" (Hazen 2008:26), whilst an assistant chief of interpretation said it was "secondary" (Hazen 2008:261). This rare insight into the extent to which World Heritage is communicated on the ground, is an important source of comparison

for the research at the WHS. Hazen (2008:261) ascertains that "the World Heritage message is left largely to individual National Park Service employees" resulting in "a lack of a consistent message", as is discussed in the analysis chapter, the research at the Ironbridge Gorge WHS has identified a comparable situation.

This low priority for communicating world heritage values was also identified by Ballantyne *et al* 2016. Research into the negotiation of management interpretative topics and themes for Canterbury Cathedral WHS revealed the low priority for WHS communication. When panellists ranked the aggregate scores for their ten most important interpretative topics, number one was "Canterbury Cathedral as a living, active place of worship" whilst at number 19 out of 20 was "Canterbury Cathedral as a World Heritage Area because of its cultural and historic significance" (Ballantyne *et al* 2016:76). This research focus on the extent to which World Heritage is prioritisation within the onsite interpretative media at the Ironbridge Gorge WHS is an important part of the research process and is addressed in both the context chapter and the analysis chapters.

2.4.6- Communicating OUV through World Heritage Education pedagogy

During the literature review, it became clear that there were specific "hooks" and "entry points" (Falk and Dierking 2000) to understand and make meaning of the concept of OUV. This pedagogy is evident from WHS interpretative strategies, interpretative media, educational programmes and resources. For the first time, these pedagogies have been complied and form the basis for analysing the extent

to which World Heritage Values are communicated within the onsite learning process.

- Network Effect

WHSs are made understandable through their relation to other inscribed sites. As Evans (2002:118) proposes "since the World Heritage List is by definition cumulative…. prospective sites assume a competitive position, for example: `historic (Maritime) Greenwich has been designated a WHS, its significance thus perceived to be on a par with the Taj Mahal". Rebanks (2009:12) has called this the "Network Effect", Ryan and Silvanto (2009:293) referred to this as an "association effect", whilst Wuepper and Patry (2017:2) view it in the context of a "collective brand equity". Examples of this from the Ironbridge Gorge WHS are discussed in the context chapter.

As recognised by Falk and Dierking (2000:41) "meaningful learning results when a person is able to actively construct and find personal meaning within a situation". Staiff (2013:144) notes how this comparative understanding occurs as individuals "accommodate the unknown into something familiar", as the importance of the WHS, the OUV, is understood through the "association effect", with another site which is familiar, for personal reasons, due its locality or through name recognition such as the high-profile heritage sites. This also supports Egan (1997:85) who discusses the role of the exotic in the "romantic understanding" amongst young children, understanding based on the fascinating with distant and exotic places.

This "association effect" raises awareness of the significance of the local heritage, as recognised by a member of staff from the New Lanark WHS, who notes that the

"World Heritage status raises awareness of the global impact of the industrial revolution, which brought huge changes to people's lives and to society as a whole. It used to be hard to convince people that these are historic buildings of great significance, not just derelict cotton mills" (UNESCO UK 2016a:15).

Within World Heritage Education, this "Network Effect" is widely communicated through map-based exercises (UNESCO 2002b:60-62, Cass and Rogers 2014:3), now made interactive through online webpages for example National Geographic (2015). A good example is from the World Heritage city of Philadelphia, whose World Heritage Education Kit includes an exercise for English as a Second Language (ESOL) students with the aim of communicating Philadelphia's OUV in relation to the student's own knowledge about their familial backgrounds to other WHSs in the Americas (Global Philadelphia 2015:59-78).

Aplin (2007:381) proposes that this approach is the most likely way to integrate human values, as through studying WHSs "from a wide variety of nations, can help increase tolerance and knowledge of others, while reducing the arrogance and insularity of so many". In today's multicultural, globalised world, it is clear to see why learning about OUV through the "network effect" is a commonly used approach.

- Threats

Another approach, is communicating the relevance of World Heritage through an awareness of threats to them, for example at the Bath WHS (Bath Preservation Trust 2016b:8). As Richon (2005:54) proposes "World heritage threats also provide teaching opportunities on how to relate to others, they underline and

permit to enhance a feeling of collective solidarity and a sense of common individual / civic responsibility". This approach to engage students is widely used at present, given the increasing threats to WHSs by extremists most notably at Palmyra, Timbuktu, Nimrud, and Sana'a, but also in the past with the Bamiyan Buddhas and Mostar Bridge. This also include natural threats (Heine *et al* 2012) for example Venice and the Great Barrier Reef and other manmade threats as at Angkor Wat and Abu Simbel (UNESCO 2016b:52). Such an approach allows for a greater understanding of their global importance and importance of their protection for future generations by situating them within the present context. This approach is enshrined in the convention as Article 7 is "to undertake to keep the public broadly informed of the dangers threatening this heritage and of the activities carried on in pursuance of this Convention" (UNESCO 1972).

- Values and Attributes

Understanding OUV through the concepts of values and attributes is currently being trialled at UK WHSs. First developed by the Jurassic Coast WHS, the model is based upon fostering a personal approach to understanding values and world heritage. Bath WHS have since created 'My Heritage' (Bath Preservation Trust 2016a:10), a primary school classroom activity resource pack in 2009, and comparable resources was piloted by the Derwent Valley's Mill World Heritage Site (DVMMHS) education team (Cass and Rogers 2014). In the context chapter, the learning resource adapted by IGMT is discussed.

This approach is designed to introduce the students to the concept of heritage, personal values and attributes. The aim as noted by Cass and Rogers (2014:1) "was to enable the pupils to start with the idea of something that is valued and

link this to something that they can see or would preserve- an attribute". This WHS pre-visit activity aims to enable the students to personally relate to the heritage values and attributes, understand the global values through understanding the importance of personal and local values and thereby hopefully understand the OUV.

The Derwent Valley Mills WHS (DVWHS) curriculum linked activities were based on understanding the concepts of values and attributes and relating them to the WHS through hands-on onsite approaches. This included through music activities, a Design and Technology textile activity, historical inquiry using original sources and the historic environment and art and design exercises at sites within the WHS (Cass and Rogers 2014).

At the core of the DVMWHS approach was the use of experiential learning, getting the students out in the WHS, identifying the attributes, understanding their importance/value and how the site has changed. Onsite students drew sketches of sites within the WHS, annotating them with the key attributes and labelling features that were authentic and those that were modern (Cass and Rogers 2014:4-5). A 'spotting sheet' was used during the visit, on which students recorded if and where they had seen the WHS attributes and noting their value. The importance of the DVMWHS was communicated through an exercise which encouraged students "to think about what life might be like if we hadn't had factories" and "how many of the different features and buildings that were developed and built then that are still in their surroundings today" (Cass and Rogers 2014:3).

Each site has made their own additions to the model. For example, the activity 'Celebrating Bath' encourages students to communicate their associated values to the Bath WHS through creative responses such as poetry (Bath Preservation Trust 2016a:16). This is a good example of the 'Learning from World Heritage' concept.

This pedagogical approach has been discussed by Rowe *et al* (2002:97) who proposed that historical consciousness can be developed by linking the "big narrative of group to the little narrative of an individual". This supports Harris and Reynolds (2014:482,484) who identified a desire amongst students "to use history to understand their own personal background". As recognised in an AHRC report on cultural value, such examples of cultural engagement allow for the translation of "abstract notions into narratives on a human scale, and in doing so in the non-didactic fashion" (Crossick and Kaszynska 2016:70).

Grünberg notes how (2014:27) ascribed values for heritage "is mostly established within the scientific discourse or is at least led by adults, are, ideally, explained to the young people. They are not encouraged to actively engage with these values which would be the prerequisite for their internalisation and transmission to future generations". Learning approaches and activities such as those developed at the Jurassic Coast, Derwent Valley Mills, Bath and Ironbridge WHSs, enable "the voices of young people heard and that they have opportunities to explain which elements of the past constitute significant heritage for them" (Logan 2013b: 30).

- Thematic

During learning activities, the OUV is often communicated in terms of factual themes, for example 'Outstanding' in terms of being the first, biggest or most complete. Egan (1997:85) discusses how during the stage of "Romantic

understanding", children are commonly interested with the "extremes of human achievement and qualities", the kind of facts that are popularized in Guinness Books of World Records (Egan 1997:85 and Jamieson 1984:12). Egan's reasoning for this is that it is an attempt for students to gain a grasp on the limits to assure themselves that the world is "knowable" (Egan 1997:87). This reaffirms the opportunities for WHSs as learning resources for cultural heritage but also in understanding the wider human values of peace, shared heritage and cultural tolerance.

This has similarities with the work of Egan (1997:44), who discusses how young children can acquire historical knowledge, for example through binary oppositions, "good and bad, big and little, love and hate". Egan (1997:44) proposes that children "derive meaning from affective association with one of the pairs", for example "the extremes of human experience" such as the Great Wall and the Pyramids WHSs (Egan 1997:85). Consequently, it is proposed that teachers should, start with the extremes and work back to what is familiar (Egan 1997:85), comparable with Ham's (2013:132-3) Knockan Theory. This is perhaps why comparative analysis/understanding is such a popular learning approach- the understanding of the extreme (distant WHSs) in relation to the familiar/ local (local WHS).

- Criteria (Role Play)

Role-play is a widely-used learning approach in World Heritage Education (Wheatley 1997, UNESCO 2002b:30,63-66, Scaife 2002:115, Cass and Rogers 2014:6, Corbishley 2014:301-302, Corbishley 2014:317-20, Grünberg 2014:79). Alpin (2007:383) notes that "role play can be useful in providing non-violent

conflict-resolution skills to young people, to help them see the issues from different points of view and to understand the importance and application of the concept of compromise". For example, in WHYH (UNESCO 2002b:24), it proposes that students undertake a report assessing the visitor facilities and a role play exercise about the proposed development at a WHS. Corbishley (2014:301) discusses one exercise where students propose their own site based on the inscription criteria, whilst Bradley (2009:17) has developed an exercise where visiting students at Stonehenge become " 'UNESCO inspectors' tasked with inspecting the monument against the WHS criteria".

- Analogies

Finally, modern analogies are a common mechanism for making the values and attributes of the OUV understandable and relatable. By making connections between comparable current and historical events, people, organisations and places, it supports the learning process of making the unfamiliar familiar, and making the importance more relatable. Analogies as a learning mechanism to overcome distance have been widely researched, including by Ata (2009) who researched examples in history textbooks, Gilbert and Priest (1997:760) and Anderson *et al* (2002) at museums. This learning approach was identified by Spalding (2012:267) during research into the communication of Slavery narratives within museum learning programmes, as it was concluded that analogies "create 'entry points' for the pupils that will hook them into the history and articulate its relevance to their lives". Analogies are especially relevant in communicating World Heritage and the OUV, given their often-intangible values (Criteria vi) and

limited tangible cultural attributes. This pedagogical approach was evident in the research from the Ironbridge Gorge WHS, as is discussed in the analysis chapters.

-Fostering Values

When undertaking the literature review, research from Education studies around communicating values was consulted. The research identified that there are two primary forms- Character Education/Values Imposition and Values Clarification. Halstead (1996:9) notes it relates to the difference in approach, "about whether schools should instil values in pupils (Character Education) or teach them to explore and develop their own values (Values Clarification)". This way of understanding the communication of values, provides an important framework for analysing the ways in which World Heritage Values are embedded in the onsite learning process, especially through the pedagogies outlined above.

Halstead (1996:9-10), defines Character Education as the "identification of appropriate values and transmission of these approved values to children". In contrast Values Clarification is the process of "choosing, prizing and acting" on Values (Raths *et al* 1966:30). This is achieved through discussion based learning approaches (Raths *et al* 1966:37, Halstead 1996:11), through the negotiation of conflicting values. As identified above, Role-play, simulation or debate are common methods of Values Clarification (Scott and Oulton 1998:216-7). Simpson (1992:118) argues that Values Clarification is a solution to Values Imposition, as through clarification and discussion they become personally justified and internalised. As discussed above, onsite learning pedagogy related to World Heritage promotes values clarification principles, approaches and mechanisms.

2.5-Public understanding of World Heritage Values

Beyond the semantics of the concept of OUV and World Heritage Values, research is confirming that WHSs in the public mind are "a modern-day version of the wonders of the world" (Morris 2016: i), they are "important to everyone" (Cass and Rogers 2014:3), "belong to everyone" (Australian Government 2012:1) and are "irreplaceable" (UNESCO 2002b:166). It is these principles which define the concept of OUV and are at the core of the World Heritage programme and its communication and public understanding.

Shackley (1998: xiii) argues that "the term 'World Heritage Site' is instantly recognized as designating something very special, in tourism terms a definite 'must see'". Visitor surveys have revealed that at certain sites and amongst certain visitor demographics there is a high awareness and understanding, and WHS status can be a primary visit motivation, for example at the Great Barrier Reef (Moscardo *et al* 2001), Quebec City (Marcotte and Bordeau 2006), La Sagrada Familia (Palau-Saumell *et al* 2013), Guimaraes, Portugal (Remoaldo *et al* 2014:99), Stonehenge (Mason and Kuo 2008:175), the Cornish Mining Landscape (UNESCO UK 2016a:68) and at the Giant's Causeway WHS (Millward Brown 2013: Slide 10).

Aide *et al's* (2017:2) literature review of research into tourist awareness of WHS status and role in the visit motiviation suggested that despite the increasing datasets, "there is no consensus as to whether or not World Heritage is a recognised brand". Despite attempts to define it discussed above, "the concept of OUV is often poorly understood" (ICOMOS 2008:14), by visitors (Wilkinson 1996:36) and managers (Reser and Bentrupperbaumer 2005, Bentrupperbäumer

et al 2006). Low visitor understanding of World Heritage Status was identified by Williams (2005) in the USA, Hazen (2008) in the USA, Starr (2009) in Cambodia, Dewar *et al* (2012) in China, Hardiman and Burgin (2013:64) in Australia and King and Halpenny (2014) in the USA. This was especially so at the Great Blue Mountains WHS, where over 90% of visitors were either unaware of the area's status or were unable to answer why it was listed (Hølleland (2013:116). Importantly for this research, a recent survey revealed that "only 8% of 16-24-year olds in Scotland are aware that Edinburgh's New Town is part of a World Heritage Site" (Edinburgh World Heritage 2018a).

Reser and Bentrupperbaumer's (2005:137-8) research identified a "clear lack of understanding" of World Heritage Values by users of the Wet Tropics WHS, Australia. Importantly both the management staff and property documents had varied understandings of the definition, with the most common understanding was related to physical entities (attributes), reinforcing the difference in understanding between Ascribed and Human Values (Bentrupperbäumer *et al* 2006).

A survey of visitors to the Angkor-Preahr Khan WHS in Cambodia by Starr (2009) provides more insight into public understanding of World Heritage Values. The survey revealed that 78.4% of surveyed visitors were aware of UNESCO's World Heritage List and 22.3% did not know that they were visiting a WHS (Starr 2009). Importantly for this research, only one person out of 279 mentioned peace and two mentioned cultural diversity, thereby revealing a low awareness of the human values. For majority of respondents, 'World Heritage' meant conservation

for future generations, for example "to protect and endorse historically significant places as well beautiful places for our children and next generations" (Starr 2009).

Research by Poria *et al* (2011) indicated that even when a site is not inscribed as a UNESCO WHS such values are still ascribed. Poria *et al's* (2011:489-90) research at the Basilica of the Annunciation, Nazareth, whilst not a WHS, aimed to determine perceptions of the concept of World Heritage, as opposed to the official UNESCO designation. Participants were asked to comment on the statement "This site represents part of the world heritage", 170 respondents perceived the site as part of World Heritage, in contrast to 58 who did not.

Even with the passage of time, the public understanding of the concept and values of World Heritage is not yet widespread. For example, Ucko (1989: xiii) argued that "the concept of the world heritage, now embodied in a set of international conventions and recommendations, has not received adequate public discussion; its impact has yet to be fully appreciated outside a restricted tourist and developmental context". Whilst 14 years later, Allen (2003:110) equally noted that "despite the noble concept behind the World Heritage Convention, very few people appeared to know anything substantial about it".

Finally, as with the limited research overall about WHSs as learning resources and World Heritage Education pedagogy, there is little baseline research into the awareness of World Heritage Values of educational users. Scaife's (2002) evaluation of the Hadrian's Wall WHS Living History programme, Roman Roadshow, identified that there was no prior awareness of Hadrian's Wall by a majority of the students (Scaife 2002:47), whilst consultation amongst teachers on the value of the Antonine Wall WHS, revealed that fourteen of the twenty-

three teachers consulted said that the status of the wall "would not impact on their likelihood to visit" (JWF/Scotinform 2012:26). This questions if the world heritage status adds to the educational value- one which this research hopes to shed new light on.

2.6 Chapter Conclusions

This literature review has demonstrated the limited research which has been undertaken into WHSs as learning resources. Little is known about the onsite learning experience at WHSs, if being a World Heritage status is a motivational factor for learning outside the classroom and if and to what extent World Heritage Values are communicated within the onsite learning process.

Ringbeck (2008:45) proposes that "World Heritage Sites are educational sites. They convey UNESCO's goals and beliefs to the public", whilst Logan (2010:40) concluded that " 'World Heritage' is a mental construct; the outstanding universal values that are protected are simply subjective values, with all the complexity that this entails". These two statements encapsulate the theoretical framework developed in this chapter.

Given the amorphous definition and interpretation of the concept of OUV, World Heritage Values is to be used to define the collective term for both Ascribed and Human Values. Both sets of values are recognised as being nested and polysemic, and communicated and internalized through a process of selection and prioritisation, as illustrated by figure 6. This understanding recognises that WHSs are learning resources which can be utilised through experiential site visits, to learn about the history of the site, to inspire creative responses but also to

support UNESCO's aim to foster 'Peace in the Minds of Men and Women' (UNESCO 1945), reaffirming the learning framework illustrated by figure 4.

This chapter has set out the framework of learning theory and defined the concept of the 'onsite learning process' which will be used in this research. It outlined the change in understanding from education to learning, and the recognition of the importance of Constructivism and experiential learning.

Richon (2005:54) defines World Heritage Education as being "based on the appropriation of a common past, identity, space / world, values and future. It allows us to teach about tolerance, open-mindedness, mutual respect and understanding, cultural diversity, knowledge of past to shape the future, knowledge of other cultures, inter-cultural dialogue, peaceful resolution and prevention of conflicts". The definition reaffirms why a broader understanding of World Heritage as an educational resource was needed, given the multiple depths of understanding available- the ascribed values and then the human values. Understanding this is important for analysing the responses of the research participants to unpick what level of meaning are they making from the WHS and the "mental construct" of World Heritage.

Beyond being learning resources to support curriculum based learning, World Heritage Education as a pedagogy was recognised as being an 'issue-based education'. The importance of introducing the concept of values and value education is recognised by Grünberg (2014:26) who proposes that "World Heritage education is thus value education on a local and global scale". However the literature review revealed that, World Heritage Education is not embedded within the national curriculum, therefore it has fallen upon proactive learning

officers and teachers to develop resources which link WHSs to the curriculum and occasionally follow the pedagogy of World Heritage Education.

Article 4 of the World Heritage Convention states that each State Party has "the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage" (UNESCO 1972). This emphasis on "transmission" follows a Values Imposition approach rather than a Values Clarification approach and contrasts with the World Heritage Education pedagogies identified for the first time through the desk based research. These pedagogies will be used when analysing the datasets from the research at the Ironbridge Gorge.

The literature review has recognised that World Heritage Education can occur at a site level, through national initiatives and through global programmes such as UNESCO's World Heritage Programme. It recognised a disparity in terms of obligations and actions, as Meskell (2018: xviii) recognises that "the nation-state is the ultimate arbiter of World Heritage". It revealed a knowledge gap in terms of understanding if learning about World Heritage Values occurs during educational visits to WHSs. Beck (2006:521) argues that "there is a gap between the ideals and what happens on the ground". This chapter has reaffirmed this and the fieldwork at the case study site of the Ironbridge Gorge WHS provides a snapshot of the 'on the ground' reality in relation to educational visitors and the World Heritage inscription and associated values.

The context for the research is presented in the following chapter through an introduction to the case study site of Ironbridge Gorge WHS. The chapter builds on the literature review as it applies several of the theoretical frameworks to the

case study site including outlining the World Heritage Values of the Ironbridge Gorge, the development of the Ironbridge Gorge as an educational resource and WHS and assessment of the extent to which the World Heritage Values are communicated through the onsite interpretative media.

Chapter Three: Context

3.1- Introduction

Building on the theoretical framework as set out in the literature review, this chapter provides the contextual framework for the research through an introduction to the case study site, the Ironbridge Gorge WHS. The chapter reflects on the site's inscription, site management and the development of Ironbridge Gorge Museums Trust (IGMT) as an independent trust and educational charity which provides learning opportunities at 10 museums across the WHS. The chapter provides the context for the fieldwork, which will evaluate the current educational provision in relation to World Heritage Education and the communication of World Heritage Values to educational visitors.

The chapter begins with an overview of the extent to which education is embedded into the offer and management of UK WHSs. It will consider the differences between learning in a WHS and World Heritage Education. The concept of World Heritage Values as defined in the preceding chapter will then be applied to the Ironbridge Gorge WHS in the second section of this chapter. This will be followed by a discussion of the extent to which these values are communicated across the WHS, drawing on the research of Hazen (2008) and Ringbeck (2008) as outlined in the literature review. The development of the IGMT onsite learning programme and an overview of the current offer and educational visitors is discussed to set the scene for the fieldwork analysis and later discussion.

Aside from the focus on the communication of World Heritage Values at the Ironbridge Gorge WHS within this chapter, it is also important as this is the first

time that the development IGMT's learning programme has been collated and reflected upon. In the preceding chapter, it was noted that "most UK sites were important educational assets long before they gained WHS status" (PricewaterhouseCoopers 2007:13). In 2017, IGMT celebrated its 50th anniversary as a heritage conservation and education charity, a year after it celebrated the 30th anniversary of the Ironbridge Gorge WHS inscription.

3.2-World Heritage Education in the UK

As discussed in the literature review, WHSs as learning resources can be considered at different scales. This chapter introduces a site level perspective by setting the context for this research into how schools use the Ironbridge Gorge through educational visits and to what extent it supports a World Heritage Education learning approach. However, it is first important to highlight the findings from the desk based research into World Heritage Education in the UK which reveal commonalities and differences with regards to site level provision.

Museums and heritage sites within UK WHSs have been recognised as award-winning in terms of their learning programmes, for example, museums and heritage sites in 18 out of the 31 UK WHSs have been recognised for their quality and excellence in the educational services and facilities through winning the Sandford Award for Heritage Education (Davies 2017). However, the Tower of London won the first award back in 1978, 10 years before it was inscribed as a WHS. This supports recognition of the DCMS (2008:43) that despite the presence of well-developed educational programmes at UK WHSs, they "pre-dated their inscriptions as World Heritage Sites" (DCMS 2008:43). The DCMS research identified that "of the six case studies only one site (Blaenavon) was either

running or had plans to run an educational programme which linked specifically to World Heritage" (DCMS 2008:43).

The educational use of these iconic heritage sites of significance in many cases has long origins, for example, at Studley Royal Park and Fountains Abbey WHS, the earliest known school visit is recorded in 1851 (National Trust 2015:7). Long before inscription these sites were widely recognised as important educational case studies, as Cannadine *et al* (2011:87) notes in their research into the development of the English History curriculum, prior to the introduction of the National Curriculum, students were "introduced to the history of Greece and Rome, [the] Roman invasion of Britain and their influence. Bath and Hadrian's Wall featured mainly, but in those days, it would be rare for a Liverpool child to have visited either, or even dream one day of doing so".

Davies (2014) and DCMS (2008:43) demonstrate how WHSs are important resources for learning with the majority of UK WHSs being used as case studies for classroom learning and for educational visits. For example, in 2009, it was identified that "approximately 200,000 educational bed nights per annum take place to the Jurassic Coast" and "more than 300 teachers use the Jurassic Coast within their curriculum development programmes" (ERA Ltd/Dorset and East Devon World Heritage Site Steering Group 2009:16). Furthermore, in a recent report on the value of UNESCO by the UK National Commission for UNESCO they provide best practice examples of UK WHSs as learning resources from New Lanark WHS (Cross curricular linked education pack and e-learning platform), Saltaire WHS (opportunities to contribute to the management and further

education work experience) and Ironbridge Gorge WHS (university partnership and postgraduate research/fieldwork) (UNESCO UK 2016b:29-30).

As outlined in the literature review, at WHSs across the UK, proactive teachers and learning officers from museums and heritage sites within the WHS have developed different resources to support classroom learning and site visits. Some of which do explicitly communicate World Heritage Values, whereas others are more implicit and are focussed on the broader curriculum links that can be drawn from the collections, museums and heritage sites. It is important to note however, where there have been significant learning activities (resources and projects) related to World Heritage Education these have been primarily been focussed around the nomination process and designation anniversaries. The learning aims and experiences of these time limited resources and projects most actually reflect UNESCO's ideal engagement with the World Heritage Values of both the individual site and the wider programme. Examples of educational projects as part of the nomination process of a UK site include the English Lake District's school letter writing project and World Heritage schools pack (ITV Report 2017) and Ysgol Y Moelwyn's project to send pieces of local slate to World leaders to garner support for the Slate Industry of North Wales bid (Jones 2018). Finally, following a commitment by the First Minister of Scotland (Scottish Government 2014) during the nomination of the Forth Rail Bridge in 2015 that every primary school child should be able to have access to a 3D scan of the bridge, the data was released in 2018 to support science and engineering learning (UNESCO UK 2018).

In the absence of a distinct World Heritage Education curriculum theme in the National Curriculum in England, with the recognition that many WHSs were

learning resources long before designation and that the extent to which World
Heritage is communicated through specific learning programmes and material
varies from site to site and even learning department to learning department
within each site, it is important to set the context for the case study site of the
Ironbridge Gorge WHS.

3.3-Ironbridge Gorge WHS

3.3.1- The Outstanding Universal Value of the Ironbridge Gorge WHS

In 1986, the Ironbridge Gorge became one of the first batch of 7 sites in the UK to
be awarded WHS status. As summarised in Table 3, the Ironbridge Gorge was
inscribed by UNESCO as a cultural WHS, based on Criteria I, II, IV and VI of the
1972 World Heritage convention (ICOMOS 1985, Telford and Wrekin Council
2001, UNESCO 2013b:284-6). The 2017 World Heritage Management Plan states
that the significance of the WHS is 'unquestionably global' (IGMT 2017d:7).

The OUV of the Ironbridge Gorge WHS is that in 1709, the Quaker Abraham Darby
I, first smelted iron and coke (instead of using charcoal) with the Old Furnace
(Figure 2b) evidence of this. Located in Coalbrookdale, this is now owned by the
IGMT and protected by a pyramid shaped cover building. The technological
innovation pioneered at this furnace led to the mass-production of iron products
during the 18th century, and the developments that followed resulted in
Ironbridge becoming "one of the birthplaces of the Industrial Revolution" (IGMT
2017d:25). Secondly the first metal (cast-iron) bridge in the world was built
between 1777 and 1781 (Figure 2a). It is a symbol of innovation and influenced
later developments in technology and engineering. Located at the heart of the
village of Ironbridge, it is now owned by the English Heritage Trust. Both the Iron

Bridge and the Old Furnace meet the OUV criteria of representing a masterpiece

of human genius.
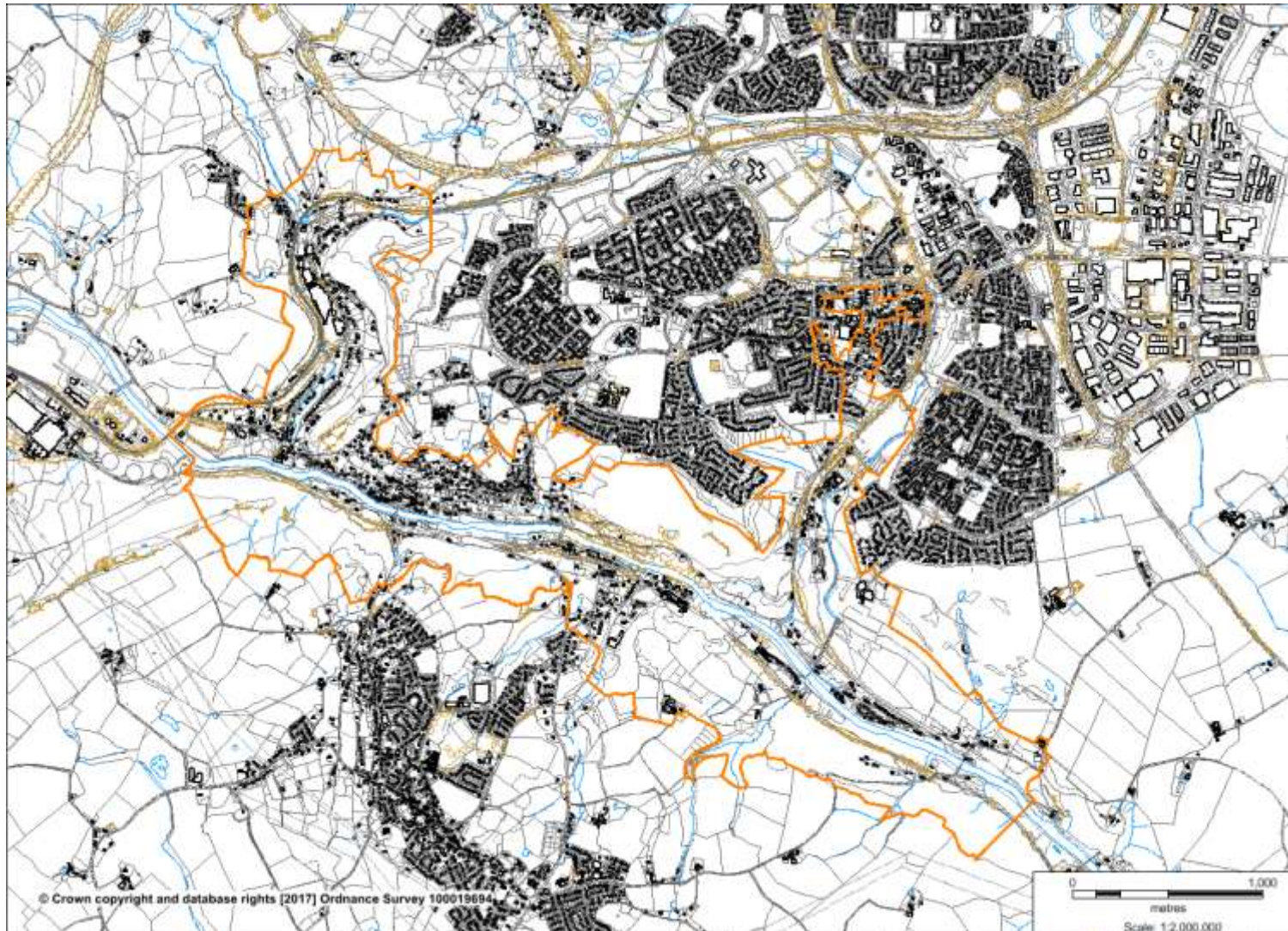
Figure 8: Map of Ironbridge Gorge World Heritage Site boundary (in orange). Source: Crown Copyright/Ordnance Survey/Nathan Morris. 2017.

N

Coalbrookdale

C

A

B

Coalport

Jackfield

Key

A- Ironbridge
B- Broseley
C- Madeley

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metres
Scale: 1:2,000,000
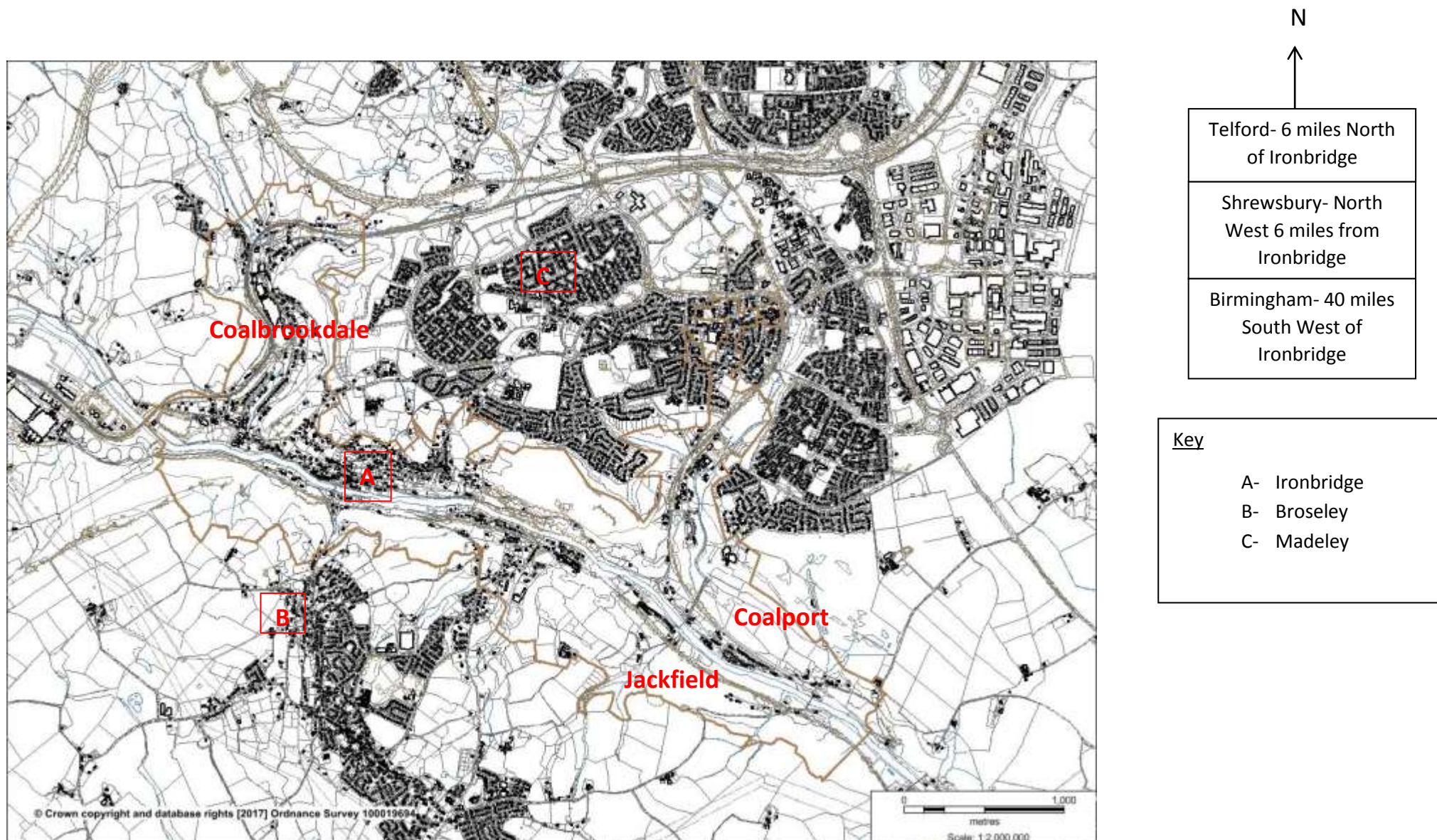
Figure 9: Map of Ironbridge Gorge World Heritage Site boundary with locational information. Source: Crown Copyright/Ordnance Survey/Nathan Morris. 2017.

Table 3: Table summarising the UNESCO criteria through which the Ironbridge Gorge WHS has been inscribed	
Criterion (i): to represent a masterpiece of human creative genius	The Coalbrookdale blast furnace perpetuates in situ the creative effort of Abraham Darby I who discovered the production technique of smelting iron using coke instead of charcoal in 1709. It is a masterpiece of man's creative genius in the same way as the Iron Bridge, which is the first known metal bridge. It was built in 1779 by Abraham Darby III from the drawings of the architect Thomas Farnolls Pritchard.
Criterion (ii): to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design	The Coalbrookdale blast furnace and the Iron Bridge exerted great influence on the development of techniques and architecture.
Criterion (iv): to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history	Ironbridge Gorge provides a fascinating summary of the development of an industrial region in modern times. Mining centres, transformation industries, manufacturing plants, workers' quarters, and transport networks are sufficiently well preserved to make up a coherent ensemble whose educational potential is considerable.
Criterion (vi): to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.	Ironbridge Gorge, which opens its doors to in excess of 600,000 visitors yearly, is a world-renowned symbol of the 18th century Industrial Revolution
Source: UNESCO 2005:19-20	Source: UNESCO 2013b:284-6

Table 4: Attributes of the Ironbridge Gorge WHS. Source: IGMT 2017d:34-44	
a	A 5km length of steep sided, mineral-rich Severn Valley
b	Two small river valleys leading from the Gorge to Coalbrookdale and Madeley
c	Smelting iron with coke
D	A high concentration of 18th and 19th century dwellings, warehouses and public buildings
e	Substantial mining remains
F	Collections and artefacts
g	The Iron Bridge
h	Workers' housing
I	Infrastructure and transport
J	Traditional landscapes and woodland of the Severn Gorge
k	Inspiration for artists, engineers, architects and writers
L	The historic landscape as an accessible, interpreted open air museum, educational facility and international symbol of the Industrial Revolution
m	The sequence of industrial development evident in the landscape that tells a complete story of industrial innovation and development

3.3.2 Attributes of the Ironbridge Gorge WHS

In the preceding chapter, it was noted that since 2007, all WHSs have a SOUV, which provides "a clear 'profile' outlining what constitutes its OUV, from its components and attributes to its relevance for all of humanity and to detail the processes in place to preserve the property" (UNESCO 2016b:24). A retrospective SOUV was agreed for the Ironbridge Gorge in 2013 (UNESCO 2013b:284-6), and in addition to the criteria (Table 3), it summarises the site management and attributes (Table 4) upon which the authenticity and integrity of the site is based. The 2001 and 2017 management plans, define the attributes and values which make the Ironbridge Gorge WHS of universal significance (Telford and Wrekin 2001: Section 2.6, IGMT 2017d:34-44). The attributes of the Ironbridge Gorge WHS are the "material evidence of Britain's emergence as the world's first industrial nation" (IGMT 2017d:7). The Ironbridge Gorge is therefore comparable to the Hadrian's Wall WHS, which Mason *et al* (2003:10,13) summarise as being "a constellation of scheduled monuments and listed buildings with unique status at the national level; it is also inscribed as a World Heritage Site, more as a conceptual entity than as a particular place".

The Ironbridge Gorge WHS is a good example of how the understanding of OUV and nomination process has changed over time. The retrospective SOUV and identification of the site attributes is a result of the "sparse evaluations of the 1980s" (Schmutz and Elliot 2017:154) by UNESCO's advisory bodies and limited requirements and therefore short nomination files. Schmutz and Elliot (2017:142), through their analysis of advisory body evaluations, identified that "these documents expanded dramatically in length and formal complexity, employed

greater use of scientific terminology and addressed an increasing range of evaluation topics over time". This reaffirms Schmutz and Elliot's (2017:153) proposition that "the bar [which] must be cleared to prove OUV seems to have grown higher over the years".

Within the Ironbridge Gorge WHS SOUV, and importantly for this research Criteria iv explicitly references education, as it recognises that the attributes of the WHS are "sufficiently well preserved to make up a coherent ensemble whose educational potential is considerable" (IGMT 2017d:21). The research will consider to what extent this 'educational potential' has been realised.

Since inscription, there has been a widespread discussion whether the WHS inscription would be best served under the new World Heritage cultural landscape category (Rodwell 2008:69), rather than the cultural site category through which the site was inscribed. As illustrated by figures 8-9, the industrial landscape of the Ironbridge Gorge covers an area of 5.5 km^2 (550 ha), and includes the raw materials (mines- coal, clay and tar), transportation (railway lines, canals and Hay Inclined Plane), processing (furnaces, spoil heaps) and manufacturing (iron, tile, clay pipe and china works, and associated factories, workshops and houses) all situated alongside the River Severn in and around the Severn Gorge.

In line with the theoretical framework established in the literature review, Table 5 defines the World Heritage Values of the Ironbridge Gorge WHS which are to be the focus for evaluating to what extent they are communicated within the onsite learning process. The ascribed values are based upon the criterion and attributes as defined in the SOUV, whilst the human values are drawn upon those proposed by UNESCO as discussed in the preceding chapter. This framework will be

discussed further in the methodology chapter and applied to fieldwork data

analysis in the later analysis chapters.

Table 5: Table of World Heritage Values for Ironbridge Gorge WHS. Source: Author. 2017.	
Ascribed Values	Human Values
International Significance World Heritage Site Status UNESCO Symbol of the 18th century Industrial Revolution First known metal bridge First smelted iron using coke Birthplace of Industry Industrial landscape- coherent ensemble	Peace Cultural Tolerance International understanding

3.3.3 The 'Heritagisation' of the Ironbridge Gorge

The decline of industry in the Ironbridge Gorge at the end of the 19th century and early 20th century preserved the industrial landscape. During the mid-20th century, the field of study of industrial heritage was born, as its importance was recognised in the face of destruction by post war development. The creation of the new town of Telford in 1963, led to an awareness of the importance of Ironbridge's industrial heritage and the need for its protection (Cossons 1979:179). This was because the Severn Gorge was "effectively frozen in its late Victorian state" (Telford and Wrekin 2001: Section 2.6.5), resulting in a high degree of authenticity and integrity of the site attributes (Table 4).

Hewison's (1987) term "Heritagisation" summarises the process from industrial decline to a learning resource/visitor attraction and subsequent inscription as a WHS. Donnachie (2010) and Harrison (2013:82-3) propose that industrial sites in the UK (including Ironbridge) were designated as heritage, and "refashioned in the model of a museum exhibit…as museum pieces on a monumental scale". Hewison (1987:93) notes the museums in Ironbridge have "been built round the ruins that are its exhibits", as now evident through the provision of gateway signs at the boundary of the WHS (Figure 12e).

The Ironbridge Gorge was the first industrial WHS in Britain, however its importance was recognised long before, as the Iron Bridge was Britain's first scheduled industrial monument in 1934 (Neaverson and Palmer 2012:145) and as early as 1964, the Gorge was identified as a prime candidate as a national park of industrial archaeology (Rix 1964).

The first Coalbrookdale Museum of Iron opened in 1959, commemorating the 250th anniversary of Abraham Darby's coke smelting process, along with the newly excavated Old Furnace, by Allied Ironfounders, the owners of the Coalbrookdale Ironworks (Cossons 1979:179).

In 1967, the Ironbridge Gorge Museums Trust (IGMT) was established as an independent educational charity to preserve and interpret the industrial heritage of the gorge. The trust's twin aims remain those of education and heritage conservation (IGMT 2010b:4). It now manages 38 Listed Buildings, 5 Scheduled Ancient Monuments, over 100 acres of land, a research library, a tourist information centre, two youth hostels, historic woodlands and two Quaker burial grounds, within the WHS including 10 Museums (Figures 9-10 and Table 7) (IGMT 2014b).

IGMT were at driver of the 'heritagisation' of the Ironbridge Gorge, and as noted in the press release upon inscription in 1986, "in less than 20 years, the Ironbridge gorge museum has pioneered discovery, conservation and exploration of the vast heritage of the gorge to such an extent that areas formerly nobody would have wished to visit the area except as a specialist historian now some half million visitors annually come to see historic sites where our modern world begun" (IGMT 1986).

As Table 6 demonstrates, the IGMT is just one stakeholder of the WHS. Given the longstanding structured management system for the Ironbridge Gorge by partner organisations, the WHS inscription criteria for protection and management was met (UNESCO 2005:25-28). Since 2013,IGMT have had a service level agreement with Telford and Wrekin Council to lead on the management of the WHS (IGMT

2017d:16). IGMT's responsibility for the management lies in the development of the quinquennial management plan (Telford and Wrekin Council 2001, IGMT 2017d) and coordination of the WHS Steering Group (Blockley 1999c, Beale 2014:113). This responsibility was one of the factors behind deciding to solely study the role of IGMT, rather than analysing other stakeholders and educational providers within the WHS.

Table 6: Partner organisations of the Ironbridge Gorge WHS which form the World Heritage Site Steering Group. Adapted from IGMT 2017d:10.	
Department of Digital, Culture, Media, and Sport	UK State Party Government agency
Historic England	Advisor to the government on cultural heritage policy
English Heritage Trust	Formed in 2015, following the split from Historic England, this registered charity manages the National Heritage Collection which includes the Iron Bridge
The Environment Agency	Non-departmental public body with a responsibility for the protection of the environment in England
International Council on Monuments & Sites UK (ICOMOS UK)	The UK national committee of ICOMOS which has the special role as official adviser to UNESCO on cultural World Heritage Sites.
Ironbridge Gorge Museum Trust	Established 1967, manages most of the key industrial monuments
Natural England	Advisor to the government on natural heritage policy
Severn Gorge Countryside Trust	Established in 1991, owns and manages most of the countryside throughout the World Heritage Site
Shropshire Council Telford & Wrekin Council	Local planning authorities
Broseley Town Council Gorge Parish Madeley Town Council	Parish and Town Councils within the World Heritage Site

The Ironbridge Gorge WHS Steering Group has been in existence since 1995, and comprise representatives from key stakeholders (Table 5) to provide a coordinated approach to the management of the WHS (IGMT 2017d:79). Unlike other UK WHSs (Davies 2014), there is no education sub group for the Ironbridge Gorge WHS, despite the fact that other partners have developed programmes and resources for educational users.

A World Heritage Coordinator for the Ironbridge Gorge WHS was appointed in 2001 by Telford and Wrekin Council; however, this post was discontinued in 2012. Unlike other UK WHSs, there is no single person to coordinate and implement the holistic management and the communication of World Heritage values. As recognised by Historic England, "Steering Groups and Management Plans are most effective when there is a World Heritage Site Coordinator in place. For a complex site, this is likely to be a full-time function" (Historic England 2009:15).

In addition to the lack of World Heritage Coordinator or Education steering committee, there is not a World Heritage Visitor Centre within the Ironbridge Gorge WHS. At WHSs across the world, there is an increasing trend for visitor centres (also known as WHS Gateways) being built out of a need to provide a focus understanding and interpreting the WHS and to their scale and scope. There are numerous example of completed or under completion World Heritage Centres in the UK, for example at Durham in 2010 (Davies 2014), Derwent Valley Mills (Derwent Valley Mills 2016) and Jurassic Coast (Seaton Jurassic Centre- Bradt 2016) in 2016, Edinburgh in 2018 (Edinburgh World Heritage 2018) and opening in Bath in 2019 (Bath and North East Somerset Council 2015). However there has

been a permanent exhibition about the Ironbridge Gorge WHS and the UNESCO
World Heritage Programme at Blists Hill since 2009, as will be discussed.

These differences in the management structure in comparison to other UK WHSs
are important to recognise from the outset, as will be demonstrated in the
analysis chapters, they are leading to the low prioritisation of the communication
of World Heritage and delivery of World Heritage Education across the Ironbridge
Gorge WHS.

3.3.4- The 21st Century Ironbridge Gorge WHS

The Ironbridge Gorge is a living WHS. It is a place of home and work for 4000
residents (IGMT 2017d:11) and each year, there are an estimated one million
visitors to the Ironbridge Gorge WHS (IGMT 2017d:54). Despite this, only around
half enter an IGMT museum, for example in 2016, there were 479,947 visitors to
IGMT attractions across the WHS (Gossage 2017. Pers. Comm.). This is a challenge
in terms of communicating World Heritage Values as these visitors are less likely
to engage with the world heritage specific interpretative media at IGMT's
museums.

Figure 11 illustrates the multi-site nature, "layer of attractions" (Hall and Piggin
2002:402), which is a common feature of WHSs given the scale and scope of the
inscribed properties. Smith's (2002:147) results from visitor surveys at the
Greenwich WHS, which similarly comprise a collection of "individual attractions",
discovered that "visitors were tending to visit individual attractions…rather than
making a concerted effort to visit the WHS as a specific entity". Similarly, at the
Loire Valley WHS, where visitor research identified that despite getting a total 5
million admissions per year (2005-2010), 70% of those visits were only to 7

monuments (Delaplanque 2015: Slide 17). This is comparable with the Ironbridge Gorge for example The Iron Bridge and Blists Hill Open Air Museum. Out of the 10 sites (Table 7), Blists Hill Victorian Town Open air museum provides the gateway to the WHS and is the most visited attraction of the IGMT by general visitors and educational visitors. It is at the centre of the 'attract and disperse model' adopted by IGMT to increase dwell-time and expenditure. As a result, Blists Hill receives most of the museum-entry visitors within the WHS. This unequal distribution is challenging given that each museum communicates their part in the Ironbridge Gorge WHS story and the OUV.

IGMT has been highly praised and viewed as an innovative heritage management model (Telford Tourism Partnership 2014:4), financial management (Woodhouse 2014) and the regeneration of industrial landscapes (Telford and Wrekin Council 2001). It is the largest independent museum in the UK (Woodhouse 2014), with 10 museums, 220 employees and over 500 volunteers, generating more than 34,000 volunteer hours in 2014 (IGMT 2014a:6). Unlike other museums, IGMT has "no regular funding from central government or the local authority, so everything we do we self-generate, or we fundraise or apply for grants" (Woodhouse 2014). This commercial model is based on income from admission charges, trading and commercial activities, whilst development costs are sought through grants and donations. Examples of the innovative methods include the Passport scheme, costume production for other museums, and other retail business (including products ranges *from the Collection* which is inspired by the collection, and *Made in the Gorge* which is made by the 'creative tenants' who work within the WHS). Income from educational activities is an important part of the overall revenue through admissions and facilitated learning workshop/session charges. Whilst

Holden (2008:10) proposes that "Learning is in the DNA of the heritage sector, and of museums and galleries; it should be their very raison d'être as they engage with and draw on the wider world", the importance of income from educational visitors for IGMT economic sustainability supports Cooper and Latham (1988:256).
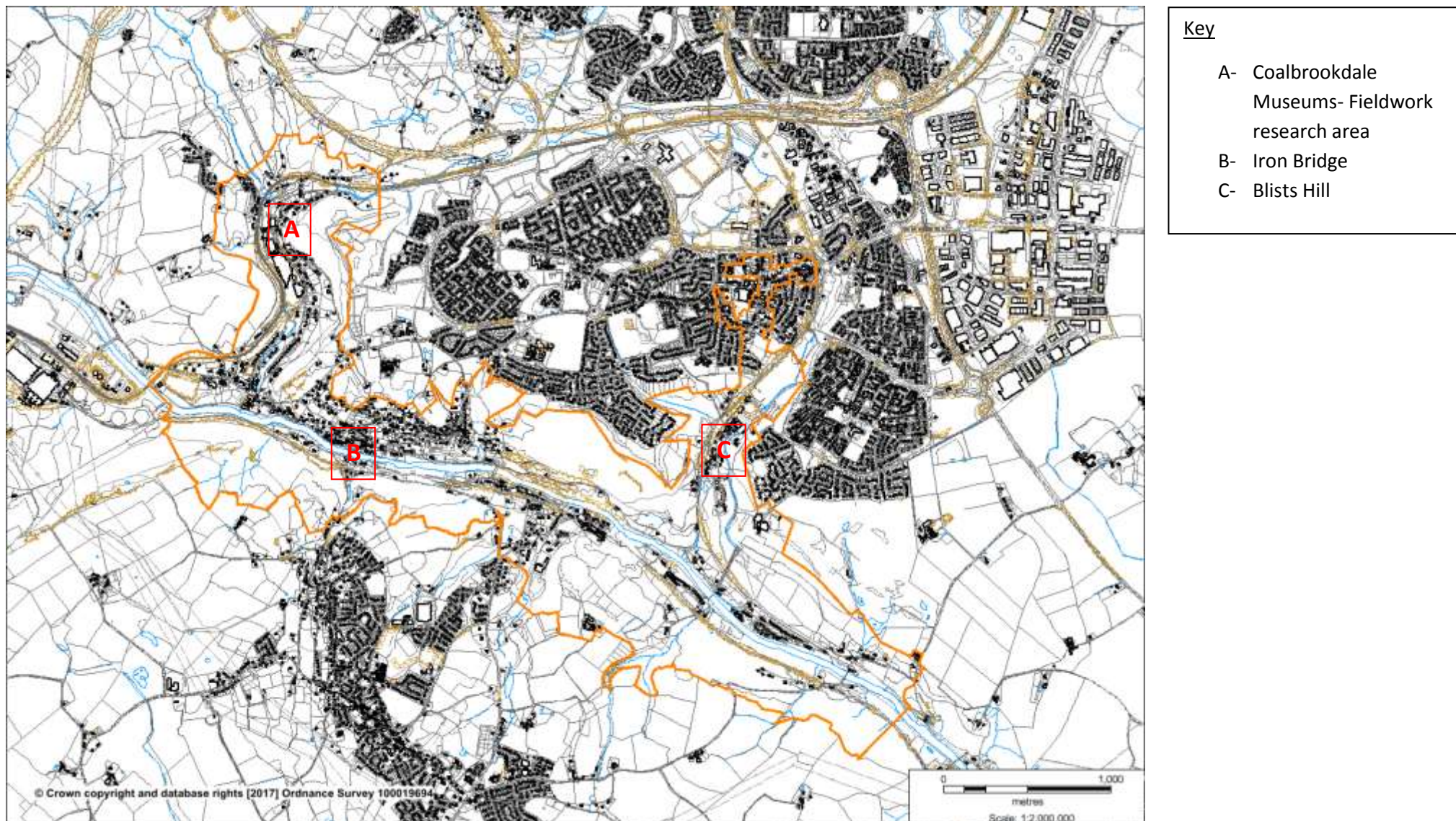
Figure 10: Map of Ironbridge Gorge World Heritage Site boundary with key fieldwork sites marked. Source: Crown Copyright/Ordnance Survey/Nathan Morris. 2017.

Key

A- Coalbrookdale Museums- Fieldwork research area
B- Iron Bridge
C- Blists Hill

1	Blists Hill Victorian Town	Open air museum with first and third person interpretation of Victorian industrial town - 1900 Blists Hill. Opened in 1973.
2	Enginuity	Science and technology centre packed with hands-on activities and interactive exhibits. Opened in 2002.
3	Coalport China Museum	The National Collections of Coalport and Caughley china combined with demonstrations and hands-on activities at the former Coalport China Factory. Opened in 1976.
4	Jackfield Tile Museum	Museum housing National Tile Collection, within the former tile factory at Jackfield, with its original gas-lit trade showroom, as well as galleries and period room settings and reconstructions including an Edwardian Tube Station and a pub. Craven Dunnill tile factory remains in operation onsite. Tile design and decorating activities are available. Newly opened Fusion, provides a showcase for local designers and makers. Opened in 1986.
5	Coalbrookdale Museum of Iron	Remains of the water powered blast furnace where Abraham Darby I perfected the smelting of iron with coke instead of charcoal. Museum of Iron includes examples of domestic and decorative ironwork which provide a background the industrial importance of the site and its products. Furnace and small museum opened in 1959, current museum opened in 1976, refurbished in 2017.
6	Museum of the Gorge	Introduces the history of the Ironbridge Gorge and World Heritage Site and combined with Tourist Information Centre. Opened in 1977, refurbished in 2016.
7	Darby Houses	Former homes of the Darby family in period presentation with original material, designed to provide an insight into the everyday life of Coalbrookdale's Quaker ironmasters. Quaker burial ground nearby. Opened in 1985.
8	Tar Tunnel	Underground tour of the Tar Tunnel which was struck in 1787, hitting a spring of natural bitumen. Hay Inclined Plane nearby. Open to visitors from the 1970s.
9	The Iron Bridge and Tollhouse	Iron Bridge built over the River Severn in 1779 by Abraham Darby III, the first cast Iron bridge in the World. Tollhouse (with limited opening times) includes an exhibition on the bridge. Bridge always open to visit as a monument, closed to vehicles from 1934, tollhouse open from 1975.
10	Broseley Pipeworks	A museum located in a former tobacco clay pipe maker, presented as it was when it was shut down in the 1950s. Opened in 1996.
Table 7: Summary of IGMT Museums. Source: Adapted from Beale 2014.		

Map of Coalbrookdale Museum of Iron
and Old Furnace

Quaker Burial Ground

Darby Houses

The Old Furnace
10-12

9

2 3

Museum of Iron

1

4 - 8

Enginuity

1	Car Park
2	Toilets and Accessible Toilets
3	Entrance to the Museum of Iron
4 - 8	Museum of Iron, Exhibitions, Café, Shop and Toilets
9	Boy & Swan Fountain
10 -12	The Old Furnace
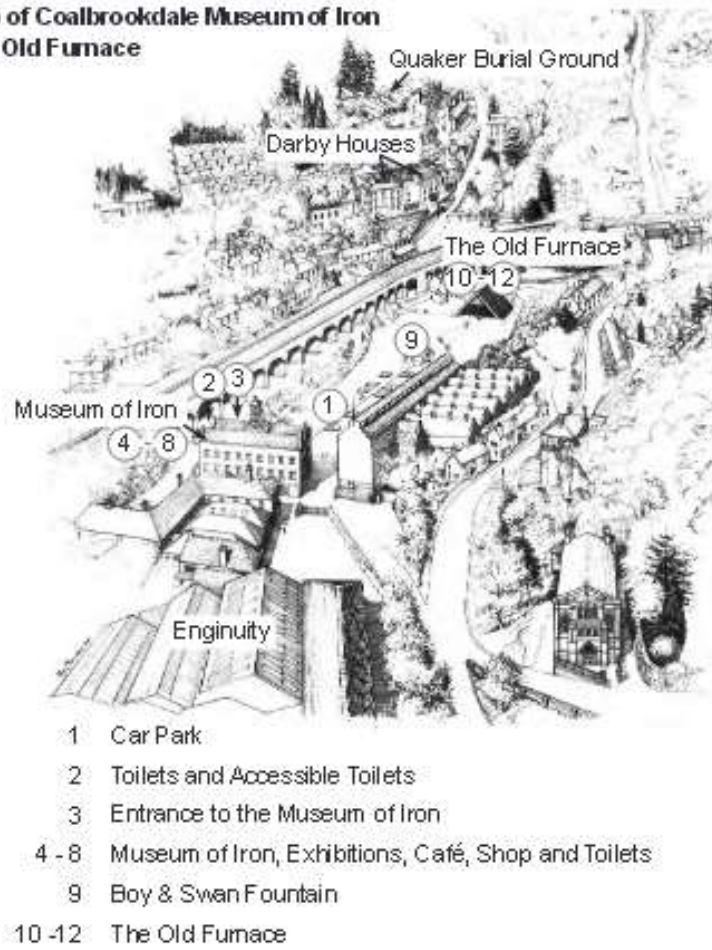
Figure 11: Map of Coalbrookdale. Source: IGMT 2015c.

3.4-Communicating World Heritage at the Ironbridge Gorge WHS

The first section of this context chapter has defined the OUV of the Ironbridge Gorge WHS as well as outlining the background to the development of the WHS and an overview of the site management. Given the research focus on the communication of World Heritage Values, it is important to build on the literature review discussion, notably Hazen (2008) and Ringbeck (2008) to introduce the ways in which the World Heritage inscription and values are communicated across the site.

3.4.1 - World Heritage Interpretative media at the Ironbridge Gorge WHS

In the 2017 management plan, one of the four aims which the partners of the WHS are committed to working together is to "interpret the World Heritage Site in ways which ensure its accessibility to all" (IGMT 2017d:8). This is recognised in the SOUV also, which states that the WHS is "a historic landscape that is interpreted and made accessible through the work of a number of organisations" *(*IGMT 2017d:20), whilst attribute I is "The historic landscape as an accessible, interpreted open air museum, educational facility and international symbol of the industrial revolution" (IGMT 2017d:42). Although this research foregrounds the work of the IGMT, it is important that all stakeholders interpret and communicate the WHS in their own ways.

As recognised back in 1994, "the IGMT carries out the lead role in interpreting the World Heritage Site through its various museums. It uses a wide range of interpretative techniques to achieve this- guided tours, costumed demonstrators, workshops, exhibitions, interpretation panels, special events and print" (Blockley/Ironbridge Institute 1994:45). Over 20 years, on this stands true today-

with the addition of digital interpretative media. As recognised by the museum themselves interpretation across the museums consists of display boards, high tech technology including touchscreens and interactive displays, but also "human interpretation provided by our staff" at Blists Hill to "keep the feel of authenticity by limiting the amount of displays on the site" (IGMT 2016g:99). The multi-layered and holistic interpretative approach is used to communicate the diverse interpretative themes across the WHS, however to what extent is the WHS status communicated?

Periodic Reporting is an assessment of the implementation of the World Heritage Convention application by State Parties which is undertaken every six years. There have been two cycles of Periodic Reporting (2000-2006, 2008-2015). The datasets provide an insight into the extent to which the WHS status and it's OUV is communicated. In the first phase report for Ironbridge Gorge WHS (UNESCO 2006), it was noted that there were not enough signs referring to the WHS, and that whilst the emblem was used on some publications overall there was inadequate awareness of World Heritage, with the only specific World Heritage initiative being an annual WH weekend from September 2005 (Davies 2014:30) and a short lived WHS newsletter (UNESCO 2006:4). Whilst there has been a commemorative plaque at the Iron bridge (12a-b) since 1987, there is not one also at the Old Furnace, which is a missed opportunity in terms of communicating the WHS status.

Figures 12a-b: World Heritage inscripton interpretation at the Iron Bridge and inclusion of the UNESCO World Heritage branding in interpretation on the English Heritage information sign. The UNESCO designation plaque was unveiled on May 5th 1987, despite inscription in 1986. Photographs taken by author in 2016.

In the second phase report, it was concluded that the OUV was "adequately presented and interpreted but improvements could be made" (UNESCO World Heritage Centre 2014:7). There had been greater cooperation and coordination to embed the World Heritage Values across the site's interpretation, presentation and communication for example a permanent exhibition in Blists Hill in 2009 (Figure 12c-d) and the commissioning of a WHS Interpretation Plan (PLB Consulting Ltd 2008). The extensive new signage (Figure 12e-g) follows Ringbeck's (2008:46) best practice in communicating World Heritage. The new signage included the UNESCO logo and the World Heritage Programme emblem as well as new Ironbridge Gorge WHS branding, commisioned by Telford and Wrekin Council and which incorporates architectural symbolism from the Iron Bridge, the clocktower at the Museum of Iron, Coalbrookdale, the Darby Houses, the bottle kilns of Coalport and the River Severn within the letter I for Ironbridge. As stated in the Operational Guidelines, the World Heritage Emblem, symbolizes the Convention, propretieis inscribed on the list, "the interdependence of cultural and natural properities" and is "a representation of the universal values for which the Convention stands" (UNESCO 2015:para 258).

Figures 12c-d: Photographs of the new permanent World Heritage Exhibition at Blists Hill, installed in 2009. This exhibition communicates the OUV through high tech interactive interpretation and interpretation communicating the 'network association'. Photographs taken by the author in 2015.

Figure 12e: One of a number of WHS gateway road signs which include the Ironbridge Gorge

WHS branding. Photograph taken by author in 2016.

Figures 12f-g: IGMT operational signage which includes the World Heritage branding and / or

mentions that Ironbridge Gorge is a WHS. Photographs taken by author in 2016.

In the most recent WHS management plan (IGMT 2017d:68) with regards to

"Communicating the Outstanding Universal Value of the Ironbridge Gorge WHS",

it states that "Interpretation across the Site will continue to be key in informing

and managing visitors' knowledge and setting in context the OUV of the WHS". It

states that the primary mechanisms for communication of the values of WHS status are the annual WHS festival and the Blists Hill WHS exhibition.

Finally, Ironbridge's World Heritage inscription has also been communicated through inscription anniversaries. For example, in in 2011, the 25th anniversary a photographic exhibition was held and a firework and light display at the Iron Bridge during that year's World Heritage Festival. 2016 marked the 30th anniversary of inscription and events include a conference and a free local community open day (IGMT 2016a). The 30th anniversary was celebrated through various community events and art competitions and exhibitions. Furthermore, in 2015, the Iron Bridge along with 8 other UK WHS monuments were light up as part of UNESCO's International Year of Light and Light-based Technologies 2015 (UNESCO UK 2015). Whilst the event had more to do with showcasing light-based technologies it did raise awareness of the inscription especially through its 'association effect' with other well-known and iconic inscribed UK heritage sites.

3.4.2- Ironbridge Gorge WHS Interpretation Plan

Although now responsible for the management of the Ironbridge Gorge WHS, IGMT's interpretative interventions are focussed only on their properties within the WHS. The WHS Interpretation Plan developed in 2008 (PLB Consulting Ltd. 2008), commissioned by the steering group, aimed to develop a more co-ordinated interpretation strategy for the WHS combining the natural, cultural and social attributes amongst all stakeholders. The plan builds upon numerous recommendations (Ironbridge Institute 2000:3.6, UK/US Countryside Exchange 1996) which called for greater holistic interpretation based on the cultural landscape and through a clear unifying theme explaining why the Ironbridge Gorge is of 'Outstanding Universal Value' across all the sites. As the 1996 WHS management review concluded that "the interpretation is diffused among the various museums and historic sites; no single clear idea of why this is a WHS emerges" (UK/US Countryside Exchange 1996:2.2). It is yet to be seen to what extent this plan has been implemented in the ongoing redevelopments and current master plan which aims to "fully explain, using dynamic and innovative exhibits, the significance and context of Coalbrookdale and place it at the heart of the World Heritage Site and its surrounding area" (IGMT 2017c).

Interestingly, the values which form the basis for the plan, are not the same as those of UNESCO but values "drawn from the qualities of previous Gorge entrepreneurs and residents" which include "industrious, innovative, creative, entrepreneurial" (PLB Consulting Ltd 2008:18). Here human values are given equal status to the ascribed values of Ironbridge Gorge WHS. The plan concludes that these human values should be an integral part of the interpretation as "the

values, aspirations and qualities of people …are presented as key contributors to the Gorge's sense of place and strength of community. The human qualities and values are those vital elements of continuity that are relevant to every current and potential audience group: resident, tourist and business" (PLB Consulting Ltd 2008:19). Notably for this research, educational visitors were not included in the interpretation plan.

3.4.3 Visitors and World Heritage Interpretative media

Whilst the WHS site inscription is communicated through interpretative media across the WHS and through events organised by IGMT, to what extent does this message and the associated values resonate with visitors to the Ironbridge Gorge WHS?

As discussed in the literature review, globally there is a poor knowledge of WHS inscriptions, despite high visitor numbers, the same is true for Ironbridge, as a 2009 survey of over 5,600 non-local residents revealed that over 25% had never heard of Ironbridge Gorge WHS (Telford Development Partnership 2014:17). However, Wuepper and Patry's (2017) TripAdvisor survey of 320,000 visitors to 791 WHSs, identified that the Ironbridge Gorge was ranked third in terms of highest World Heritage visibility. This was based upon how well the site was branded (signs, plaques, pamphlets etc.). This is despite the fact, that unlike other WHSs where the inscription certificate is on public display, Ironbridge's is in the reception of the IGMT offices in Coalbrookdale (Figure 13).

The disparities between the communication and visitor engagement will be at the heart of the research fieldwork, as the interpretative media outlined above will be discussed in relation to the observed educational visitors.

Figure 13: 1986 Ironbridge Gorge WHS UNESCO Inscription Certificate on the wall

behind the IGMT reception desk in Coalbrookdale. Source: Author. 2017.

Certificate transcript: United Nations Educational, Scientific and Cultural Organisation. Convention concerning the protection of the world cultural and natural heritage. The World Heritage Committee has inscribed Ironbridge Gorge on the World Heritage List. Inscription on this List confirms the exceptional and universal value of a cultural or natural site which requires protection for the benefit of all humanity. Date of inscription 28 November 1986. Signed by the Director-General of UNESCO.

3.5-IGMT learning programme

3.5.1- Ironbridge Gorge WHS as a learning resource

Blockley (1999c:114) proposes that "the infrastructure provided by the Ironbridge Gorge Museum for receiving educational groups is a key aspect of the contemporary importance of the Gorge". Given the research focus on the WHS as a learning resource, it is therefore important to outline the development of the IGMT educational charity. It is essential to reaffirm however, that the IGMT is just one of the educational providers in the WHS, which also include the Severn Gorge Countryside Trust, Youth Hostel Association (YHA), Telford and Wrekin Council, as well as self-led visits by educational institutions. For example, the Severn Gorge Countryside Trust in 2015 worked with the Coalbrookdale and Ironbridge Primary School on 5 occasions providing outdoor learning through guided walks and workshops using the natural environment of the Ironbridge Gorge WHS, with a focus on environmental stewardship, as well as guided walks for Harper Adam University Students and Shrewsbury Secondary School (Price 2016 Pers. Comm.). This layered educational offer is evident in the 2017 management plan which sets out in the action plan an ongoing objective for "Lifelong learning initiatives for schools and community use" for IGMT, Telford and Wrekin Council, Shrewsbury Council and the Severn Gorge Countryside Trust. Therefore, whilst this research is focused on the IGMT learning provision and experience, it should be recognised as one of and not the sole educational provider within the WHS.

3.5.2- Learning through Ironbridge Gorge Museum Trust

Since IGMT was established as an Independent Charitable Educational Organisation in 1967, Education has not only been one of its core activities but also one of its major successes. The transition of an understanding of education to learning as discussed in the literature review is evident at IGMT. As Hooper-Greenhill (1994a:1) states "education is life-long" and museums are about "making sense of the world we live in", as evident at Ironbridge, where the IGMT learning team recognise this as their learning programme ranges from pre-school to primary and secondary, to further education and higher education, teachers and senior citizens with Dementia. Lifelong Learning is at the core of the IGMT 2010-2014 Strategic Plan (IGMT 2010b:7). There has always been a high educational engagement rate with the site, informally through tourist visits and formally through self-led school visits and facilitated structured educational programmes (workshops, resources, tours and outreach projects) through the IGMT education department.

Informal learning is a motive for visiting the Ironbridge Gorge WHS, for example a 1997 survey identified that, 72% of visitors to industrial archaeology sites such as Ironbridge said that they visited for "learning related reasons" (Blockley 1999b:149). A 2013, survey by IGMT reaffirmed these results as 'a fun day out' and 'informal learning' were identified as the key aims for the visit (Telford Development Partnership 2014:33-4). Whilst learning is recognised to be lifelong, adults under 50 with children account for four in ten visitors (Telford Development Partnership 2014:33-4), therefore informal learning for children is an important focus for the IGMT. Consequently there is a diverse range of

interpretative offer available for families during visits to the Ironbridge Gorge WHS, notably school holiday and weekend drop in events, acitvities and projects. A testiment of their success, is that in 2015 the IGMT won the Hudson's Heritage Award for the Best Family Day Out Category (IGMT 2015a) and in a 2013 survey, 96.4% respondents noted that Ironbridge was "good for a family visit" (Telford Development Partnership 2014:33-34). However, a recent newspaper travel review of the opportunities for family visits to IGMT museums reaffirmed the diversity of informal learning experiences however the World Heritage inscription and context was not mentioned at all (Campbell 2017).

This research is focussed on formal educational visits to the Ironbridge Gorge WHS. In 2013, there were over 75,000 educational visits across the 10 museums, "making Ironbridge one of the most visited museums for schools outside of London" (IGMT 2014a:6). The following section charts the development of the onsite learning offer and infrastructure by IGMT within the Ironbridge Gorge WHS.

3.5.3- The development of IGMT's onsite learning programme

Educational provision and the recognition of Ironbridge as a learning resource decades before the site's inscription in 1986, make identifying the impact and awareness of WHS inscription on educational visit the gorge and its museums challenging.

Prior to onsite educational provision by the IGMT, the Iron bridge and the Ironbridge Gorge was taught in schools as case studies to support classroom based learning, and schools brought pupils to the site as part of field trips. For example, in 2013, the then Shadow Education Secretary Tristram Hunt, revealed his earliest school history memory was an "impressive" trip to "sites of the

industrial revolution" including to Ironbridge, during a discussion on the importance of local heritage within the curriculum (BBC 2013). As acknowledged in the 2001 Management Plan, "the landscape and ecology of the Gorge has long been used as a resource by teachers" (Telford and Wrekin 2001: section 2.6.22). Even before the introduction of the National Curriculum from 1989, Ironbridge was part of the school led curricula, as Cossons (1979:184) notes how the "pressure on the museum's resources from educational users is now intense and visits to Ironbridge feature in the curricula of schools not just in the West Midlands but throughout Britain". In the mid-1970s, some 40,000 educational visitors visited the Coalbrookdale Museum of Iron, "from within a forty-mile radius, although a significant number visited from Merseyside and a smaller number from even further afield: London, Cornwall and Scotland" (West 1988:50).

Early on, educational infrastructure was developed, for example in 1978 teaching facilities were opened at the Coalport China Works Museum (Cossons 1979:184). In mid-1979, the nineteenth-century Coalbrookdale Literary and Scientific Institution was fitted with teaching facilities, and in the following year the main building was converted into 65 residential rooms, co-managed with the Youth Hostel Association (Beale 2014:64). From 1972, IGMT had begun running "a series of well-attended seminars aimed at familiarising teachers with the museum and its facilities" (Cossons 1979:184).

By 1979, IGMT recognised that despite significant investment "in terms of the educational use of the Gorge by schools and colleges the museum has still a long way to go towards fulfilling its commitments" (Cossons 1979:184). As Cossons (1979:184) records, learning at Ironbridge was based on teacher led visits rather

than through IGMT's educational programme, as "responsibility for guiding and the preparation of course materials has had to rest with teachers and lecturers themselves".

In the early 1980s, IGMT appointed its first educational officer (Cossons 1979:184). Between 1992 and 1993, educational visits rose by 19,000 (Beale 2014:91). By 1998, educational visitor numbers had grown to 60,000, out of 256,000 visitors to the Ironbridge Gorge Museum (Blockley 1999c:114). Examples of the increased educational initiatives during this period include the BP sponsored education pack introduced from 1990 (IGMT 1990b,1991,1992,1995,1996a,1996b,1996c,1997). These publications were "written for and by teachers of specific age groups" (Hooper-Greenhill 1994b:158-9). Importantly, whilst these were innovative age appropriate teaching guidelines, which utilised the site as a learning resource and included follow up work and qualitative evaluation, WHS status was not discussed, despite being produced after the site's inscription in 1986. It could be argued that from the outset IGMT were failing to meet the inscription obligations, by not referring to the new designation and outlining the significance of the site in relation to this global framework and UNESCO's goals. By not embedding this new framework of understanding from the beginning, IGMT missed an opportunity to directly engage with its educational visitors, especially those repeat visitors.

These BP guides built on earlier innovative publications. In 1987, IGMT published guidance for teachers about how to use the museum sites across the GCSE curriculum (Hooper-Greenhill 1994b:70) and in 1989, IGMT published guidance for teachers on Under-fives and museums (IGMT 1989). The later document is still

recognised as pioneering, as it gives useful suggestions about how the Ironbridge Gorge museums can be used to help pre-school children make deductions and inferences about the past (Cooper 2002:34).

In the early days of the IGMT, learning through participatory action (Souza 2011) in conservation was a core approach in developing the heritage site but also in fostering participation and learning opportunities. As recognised by Trinder (1976:175) "everyone who becomes involved with a restoration project enters a learning situation, whether he is a skilled engineer re-assembling a steam engine, or one of a group of schoolboys digging mud out of a canal". Trinder (1972:32) notes how a local school had been contributing to the clearance and conservation of the canals of Coalport. These early educational initiatives are comparable with the 'Acting Locally, Thinking Globally' approach which is at the heart of UNESCO's World Heritage Volunteers programme, as discussed in the preceding chapter.

Even prior to WHS inscription in 1986, "Ironbridge was becoming a classroom of the world" (Beale 2014:65). As Beale (2014:65) notes in April 1984, 30 students from Marburg, West Germany visited the site as well as visiting parties from Italy, the Belgian Ministry of Works and the Commonwealth Association of Trade Unionists including Australia and Uganda. Cossons (1979:182) notes that in 1978, around 12% of the 220,000 visitors to Blists Hill were from overseas. Overseas educational visits remain important today as is discussed later in this chapter.

Since 1981, IGMT and the University of Birmingham established the Ironbridge International Institute for Cultural Heritage (IIICH), a higher education research and training centre for industrial heritage and heritage management. This long running educational partnership remains strong, with annual intakes of

postgraduates through IIICH. The partnership provides important academic and educational opportunities including conferences, international summer school and visits, knowledge exchanges and research projects including Coalbrookdale Historical Archaeology Research and Training Programme (Belford 2010:184). Consequently, Ironbridge is one of the most researched WHSs, most notably the Nuffield Survey of the Ironbridge Gorge by Clark and Alfrey, which over three years, "provided the baseline data from which subsequent research and intervention work was undertaken" (Blockley 1999b:143, Belford 2010:172).

3.5.4- IGMT's learning programme

In 2017, IGMT Learning Service consisted of formal and informal learning opportunities at the 10 museums, with education staff providing facilitated learning at four of them (Blists Hill, Enginuity, Coalport China Museum and Jackfield Tile Museum), with outside professionals such as artists or performers brought in for special activities and projects. As of 2015, the learning team consisted of a team of 8: a learning manager, educational administrator, an educational officer at Blists Hill, a Fab Lab manager at Enginuity, and 4 presenters in Enginuity who run the interactive sessions/shows and workshops. Part time staff and volunteers also contribute for example the first-person interpretation during sessions in the Victorian school at Blists Hill and at the Darby Houses. The learning team also provide limited outreach opportunities through loan boxes and classroom based sessions on the themes of design and technology and local history; however, this comprise less than 1% of all educational visitor engagement.

The museums, collections and heritage sites within the Gorge are an educational resource for traditional subjects such as geography, geology and history, as well as numeracy and literacy through programmes offered by the IGMT (Telford and Wrekin 2001: Section 4.39). IGMT continues to offer a range of educational activities and workshops designed for Early Years. A 1985 New Scientist article (Chown 1985:55) discusses a science class exercise in which pupils were asked to build a cantilever bridge, noting that "no doubt a recent school trip to Ironbridge had its influence". Thirty years later, the Cantilever Challenge remains a workshop that the IGMT offer for the KS3-4 Design & Technology National Curriculum (IGMT 2013). All learning resources and workshops are now developed in-house by the IGMT learning team; however, no World Heritage specific resources have been developed for educational visitors. In 2009, a Travel and Tourism Diploma Resource Pack was developed on the theme 'Destination Management in a World Heritage Site', using Ironbridge Gorge WHS as the case study of a "successful leisure and tourism venue" (IGMT 2016g). This is a rare example of a WHS specific learning resource developed by the IGMT.

To further establish the context for this research, it is essential to understand the IGMT learning model developed over the last 40 years. "Live demonstrations, hands-on activities and Innovative educational programmes" are recognised in the IGMT Strategic Plan (2010b:3). It is important to discuss some of the pioneering developments in greater detail: First and Third Person Interpretation, demonstration and participatory museum, the creation of Enginuity and focus on STEM education, and the emergence as a regional and national education centre.

- Blists Hill Victorian Town

One of the innovations of IGMT is the development of First and Third Person Interpretation, through the creation of Blists Hill Victorian Town in 1973, which was "intended as a place where historic buildings and other structures affected by the creation of Telford could be relocated and re-erected" (Belford 2010:170). Given that Blists Hill is not the focus of the research it is only important to note that the Open-Air Museum format (Blockley 1999b, West 1988 and Stratton 1996, Hewison 1987, Sheehy *et al* 2014) and costumed interpretation (Hewison 1987, Jackson 2000, Malcolm-Davies 2004) has been widely critiqued. However, it remains the most visited site by educational visitors and the use of living history is supported by Fielden and Jokilehto (1993:102) who in their World Heritage manual they propose that "children will understand the story of a heritage site better if they can talk to actors laying historic roles, watch or even take part in re-enactments of great events, listen to ballads, or see Sound and Light performances with live actors".

- Industrial Skills

At the heart of IGMT's pedagogical approach is the philosophy that "to experience is to understand" (IGMT 2017d:56), which supports Shettel (1973:40) who concluded that "active participation heightens the acquisition and retention of information". For example, this occurs through china decoration at Coalport, tile decoration at Jackfield, ironworking demonstrations at Blists Hill, clay pipe making at Broseley and hand-on STEM activities and workshops at Enginuity. In the 2001 Management Plan, the importance of this learning approach is reaffirmed, as "fostering of historic industrial processes" is an aim as part of the objective "to

support activities designed to bring alive the important heritage of the WHS and to make it accessible to the widest public, while conserving it for future generations" (Telford and Wrekin 2001: Section 5, Objective 2.1).

In addition to live interpretation, another feature of the Ironbridge Educational model is learning about the industrial heritage and skills through live demonstrations and hands-on activities (Appendix 2) within the historic environment, reaffirming Williams (2011). However, Blockley rightly notes that Jackfield Tile works (which remains a commercial business) is the only attraction where visitors can experience "some of the atmosphere, sounds, smells and mess of a real factory rather than merely a museum exhibit" (Blockley 1999b:147).

- Enginuity

In 2002, the Enginuity design and technology museum was opened in Coalbrookdale. In November 2013, Enginuity became the first museum in the UK to install a Fab Lab (fabrication laboratory). The space which includes a 3D printer is designed to provide a source of educational engagement for teenage students, focussed on design and innovation. Enginuity is a good example of how IGMT have diversified the appeal and use of the site as a learning resource, for example from the traditional history and geography curricula to STEM and early years. As noted by Rodwell (2006), this diversification of the educational value is evident in "the role that interactive museums such as Enginuity at Ironbridge can perform in linking the history of technology to people's present-day experience of it, and to global issues such as climate change and sustainability".

Enginuity's approach to learning, was inspired by the site's OUV, as it focuses "on the fundamental process that made the Ironbridge Gorge so famous—the turning

of materials and ideas into useful things. Not only does the Centre embody the industrial history of the area, but it has given the museum a new contemporary relevance and meaning" (IGMT 2007). Importantly the centre was designed around the design and technology curriculum and STEM schemes of work. Learning is designed to be fun, relevant and interactive, for example its innovative Scan-IT system and 'design and creation' focused educational workshops. As discussed by Sutcliffe and Kim (2014:333), science-based museums differ from the traditional museum, as engagement is based on hands on experience through interactive interpretation, Joint Productive activity (DeWitt and Osborne 2007:692), which contrasts with the structured and static displays of a heritage museum such as the Museum of Iron or Blists Hill which uses live interpretation.

- STEM National Education Centre

Inspired by its industrial and engineering heritage, IGMT has become a national leader in STEM (Science, Technology, Engineering and Mathematics) education, through the creation of Enginuity (2002) and the housing of National Design and Technology Education Centre and Design & Technology Association library (2003). As Beale (2014:101-2) suggests, the IGMT were wise in the development of Enginuity and provision of STEM education, as in 2007 the leading position of IGMT within the Governments STEM agenda was recognised as it became the first museum in the UK to host a SETPOINT- 'sub regional 'points' for actively delivering and promoting the STEM agenda' (IGMT 2007). As a result, between 2008- 2010, IGMT delivered the STEM contract for Telford & Wrekin Council and Shropshire Council (IGMT 2009:8, IGMT 2011:6). This contract ensured that Ironbridge was a recognised "centre for the promotion of the key curriculum subjects of science,

technology, engineering and mathematics" (IGMT 2011:6). Beale (2014:101-2) notes how "the history of Ironbridge and the facilities at Enginuity were ideal for exploring the STEM subjects".

As suggested by the head of lifelong learning at IGMT, the increasing popularity of Enginuity, especially the workshops, is due to the lack of confidence and specialists in Design and Technology within schools (Dataset 1). In 2014, a science and engineering day was held at Blists Hill for secondary school children. The *Mine it, Make it, Move it* day was attended by over 400 school children who learnt about Science, Technology, Engineering and Maths using Blists Hill as a learning resource (IGMT 2015b:6). Whilst in 2017, IGMT is at the heart of a new STEAM (Science, Technology, Engineering, Art and Mathematics) agenda and the regional launch venue for a new initiative STEAM Co. which promotes the development of STEAM days for schools (STEAM Co. 2017). These days are aimed to inspire children to learn about and ultimately work in STEAM digital industries through partnerships with local industries. As summarised by one local head teacher in a promotional video it is about "engaging with digital technology in the birthplace of the first STEAM industrial revolution", whist STEAM Co themselves state "what better venue for the event than the birthplace of the first industrial revolution, the inspiring Enginuity centre in Coalbrookdale in the shadow of the Ironbridge itself" (STEAM Co. 2017)

The Ironbridge Model of Education which has developed over the years has built on pedagogical approaches from both disciplines, but also through the interpretation of the specialist discipline of Industrial Heritage (Price 2013), for example learning through live interpretation, demonstrations and industrial skills

participation. It is important to stress that the pedagogical developments are also led by financial opportunities, the curriculum and the student and teacher's needs, and the learners.

The Ironbridge Gorge WHS is therefore a site of museum education through onsite learning at its 10 museums, but also heritage education through the place based learning within the historic environment for example at the Darby Furnace and the Iron Bridge. This allows for the potential for a wider range of engagement with the WHS and greater diversity of pedagogical content and style during educational visits.

3.6- Overview of the educational visitors to the IGMT museums

Building on the overview of the development of onsite learning programmes and infrastructure by the IGMT across the Ironbridge Gorge, it is important to provide a snapshot of IGMT's educational visitors. The analysis of quantitative datasets obtained from IGMT is discussed in the following methodology chapter. From the analysis of educational data (2014-15) of educational visits to IGMT museums the following general trends can be identified:

- The number of educational admissions has fallen

Total number of educational admissions has fallen from 77,071 (2007) to 55,835 (2014), a decrease of 27.6%. However, the true number of educational visits is likely to be more around 65,000 (IGMT 2015b:5), with the inclusion of workshop and other facilitated learning visitors (which were not recorded in the dataset), but also recognising the likelihood of the duplication of data. This decrease in educational visitors could be because of a decrease in the abilities of schools to organise educational visits (funding restrictions, cost of transport or staffing

pressures) but it could also be related to the change in the curriculum and relevance of the offer. The sharp decrease in educational visitors to Blists Hill has been attributed by McGregor (2016) to the change in the National Curriculum for England, with the revised position of the Victorians within the History curriculum. Finally, following the withdrawal of the Renaissance funding scheme which provided finance towards staffing, learning programmes and marketing, it is likely this has had an impact in terms of marketing to new audiences.

- Educational visitors comprise over 10% of total visitors to the Ironbridge Gorge WHS

This supports Ritchie *et al* (2004:152) who note that primary and secondary schools can make up at least 10% of the total visitor numbers, therefore are an important revenue source. A 2014 visitor survey analysis for IGMT identified the percentage as being higher at around 15% of total museum visitors (IGMT 2017d:54), whilst both the 2001 management plan and 1994 evaluation report noted it as comprising of 20% of the total visitors to the museum sites (Blockley/Ironbridge Institute 1994:46, Telford and Wrekin 2001: Section 4.3.16).

- Majority of educational visits are self-directed visits

From the Renaissance data (April 2011-March 2012), 66.8% of educational visitors were self-directed in comparison with 33.2% which were facilitated. Self-directed visits are defined as visits where only admission to an IGMT site is booked, whilst facilitated visits are where educational visitors take part in IGMT learning activities or workshops (Appendix 2). From personal communication with long serving IGMT staff, they note there has been a shift over time from facilitated to self-directed visits. This supports Stone and Planel (1999: 38) who propose that

there has been a 'shift from direct teaching to the provision of resources and training'. The data from Ironbridge is comparable with the Tower of London WHS, where in 2015, 30% of educational visitors to the site were facilitated, booked for Historic Royal Palaces led workshops or seminars (Mann 2016, Pers. Comm.).

- Over half of educational visitors are to Blists Hill Victorian Town

In 2014, the sites that received the highest numbers of educational visitors were Blists Hill (59%), Enginuity (15%) and the Museum of Iron (10%). At Coalbrookdale the most visited sites were Enginuity, Museum of Iron, Darby Houses respectively. Whilst Blists Hill is the museum most visited by educational groups, the focus of the research will be on Coalbrookdale. The reasoning behind this is because the research is focussed on the World Heritage inscription. Blists Hill was not the reason for inscription; it was the Iron Bridge and the Old Furnace as the primary monuments of OUV for their significance, authenticity and integrity. Furthermore, given that the toll house museum (less than 1% of the total visits) provides the only quantitative data about the educational use of the Iron Bridge, Coalbrookdale with the highest concentration of museums and sites, provided a more accessible research focus. This methodological justification is discussed further in the following chapter.

- Primary school pupils comprise most educational visitors

From the Renaissance data (April 2011- March 2012), over 60% of educational visitors to IGMT museums were primary school children. This confirms the wider trend identified through the programme that 'almost half (48 per cent) of visits by British schoolchildren take place in Years 3 to 6' (MLA 2008:29).

The data showed that the highest number of educational visitors by age range and Key Stage at 19% of visitors was Year 6 (Aged 10-11) which is KS2 Primary School. In second, comprising 16% of visitors was Year 5 (Aged 9-10) KS2 Primary School and third at 8% was Year 8 (aged 12-13) KS3 Secondary School. This corresponds with the general trend in museum and heritage education where there is a higher engagement rate with primary schools, as widely reported for UK museums (Hooper-Greenhill 2007) and at WHSs (Davies 2014) and at Hadrian's Wall WHS (MingStones 2003:26). In a recent major review of formal learning in museums, it confirmed that "the great majority of school visits to museums are still, as they always have been, from the primary sector. Ninety-seven per cent of respondents said that primary schools represent a large proportion or nearly all their visits; only 20 per cent said the same of secondary schools" (Arts Council England 2016:61).

The lowest number of educational visitors by age, comprising less than 1% were students in the last years of Secondary school (KS4 –Year 11, Year 12), but also those in further and higher education and early years in reception and pre-school. This corresponds with the general trend of educational visits, a decrease at KS3/4 given the curriculum and examination pressure (Cooper and Latham 1988:259, Clive and Geddie 1998:19, Hooper-Greenhill 2007:90-91, IGMT 2007, Serota 2009:26).

Hooper-Greenhill (1994b:151) noted that "Ironbridge Gorge Museum was used almost exclusively by secondary groups until the appointment in 1988 of two full time education staff". It is clear therefore there has been a dramatic shift from

secondary to primary school users, likely because of the introduction of the National Curriculum and the resulting restrictions on formal learning.

- Local schools are the primary visitors to the Ironbridge Gorge WHS

From the 2014 educational data, the local postcode (Telford) was where most educational visitors were from (18%), followed by Shrewsbury (12%), then Walsall (8%). Overall 57% of educational visitors in 2014 were from the West Midlands, 37% were from elsewhere in the UK and 6% overseas.

Local and regional schools as primary consumers support the research by Cooper and Latham (1988:258) who identified that the average one-way distance travelled was "just over 40miles", with most trips averaging "little more than one hour travelling time". This is because one-day trips must fit into a school day and as schools are reluctant to take younger children on long trips (Cooper and Latham 1988:258, Woodham 2009:264). This is supported by Woodham's (2009:262) analysis of the RCMG datasets which revealed that "92.6% of schools in the dataset travelled less than 60 km [37.3miles] to reach the museums, with the largest proportion travelling under 20 km [12.4miles] (67.5%)". Furthermore "as just under 80% of the school visits would reached their destination after half an hour of travelling at 40mph" (Woodham 2009:263), supporting Cooper and Latham's 1988 research. Woodham (2009:252, 262,267) therefore confirms earlier research that it is local schools who are most educational visitors to museums, with local catchments evident. It should be noted that there is a further incentive for local schools as the museum operates a membership scheme for Shropshire schools (McLoughlin 2008:7, Dataset 1).

- Residential visits provide opportunities for visits by schools from further away and for a longer period of engagement with the Ironbridge Gorge

A residential educational visit is an overnight visit or over a period of days often a school week (Monday-Friday), with the visiting group staying in nearby youth hostels or group based accommodation centres. Residential visits attract educational visitors from further afield and enable them to have a more immersive experience and visit multiple attractions over multiple days. It should be noted that there are high barriers to residential trips which is why it is not always possible, for example due to the longer trip duration the increase costs, need for staff cover, student and parent anxiety and pressure and responsibility on the teachers.

From the IGMT booking data, 1205 residential students are recorded for 2014; however, given the limitations in the booking system this is lower than the true figure. The Youth Hostel Association (YHA) has hostels in Coalport and Coalbrookdale within the Ironbridge Gorge WHS. Data obtained for the two YHA sites for the financial years (March to the end of February) 2014-15 and 2015-16 reaffirm that the number of residential visits is indeed higher. In 2014-15 there were 9273 under 18s whilst in 2015-16 there were 8377 under 18s (Ellis 2016b). However, this data only provides an indication, as it records overnight bookings, for example if a group of 10 stayed for 2 nights it would be recorded as 20 overnights- therefore the actual number is likely to be significantly lower as groups commonly stay for more than one night. Residential visits have always been an important part of the educational experience and value of the Ironbridge Gorge, as recognised in 1994, "The Youth Hostel in Coalbrookdale which has just

under 100 beds and [sic] is fully booked with visiting school groups for the next two years" (Blockley/Ironbridge Institute 1994:46). Whilst the 2001 Management Plan notes that around 15,000 schoolchildren stay in the Youth Hostels (Coalbrookdale and Coalport) each year (Telford and Wrekin 2001: Section 4.3.9).

The YHA hostels are just some of the many residential operators and sites within the surrounding area where it is known IGMT educational visitors stay, with each offering visits to IGMT sites as part of their activity programme. Residential centres have their own activity programmes that vary from one residential centre to another, with the majority offering evening activities for visiting educational groups which supports teachers in keeping the students busy, whilst some also offer daytime outdoor teambuilding and outwards bound activities. For example, the Preston Montford Field Studies Council field centre, a visit to the IGMT museums is included in their activity programme, as "Ironbridge- Birthplace of the industrial revolution". It is only around 34minutes by car/ 19.4 miles from the centre to Ironbridge. As recognised by a member of staff from the centre, whilst it is only a small part of their wider offer which focuses on geography and ecology outdoor classroom course and as a base for school trips, "Key stage 2 teachers love how it brings the industrial revolution to life for the pupils" and therefore for the centre it is "a valuable selling tool for our trips, particularly strong reason to come to Shropshire as a residential location" (Munn 2016). However, when asked to what extent the World Heritage inscription is a motivation in schools booking the residential centre, the answer was "not at all", and comparably in response to the question if schools ask about the inscription, the answer was "no" (Munn 2016).

As part of Woodham's (2009) thesis analysing the Renaissance Project data in terms of social inclusion, the data for IGMT was discussed. Figure 14 (Woodham 2009:267) is a map showing the school visits from all datasets to Ironbridge Gorge Museums recorded during the Renaissance in the Regions programme, displaying only schools from England. In the analysis of the RCMG datasets, Woodham (2009:266) notes how residential trips explain long-distance museum visits, through the example of a year six trip from a school on the Isle of Wight to IGMT museums. Woodham (2009:266) notes how "this visit included travel of around 329 km by land transport/boat and was part of a four-day residential visit". The visit motivation was due to the proximity of the museums and "the uniqueness of Ironbridge, as the site where the industrial revolution started, meant that no other site was quite as well suited to supporting the Industrial Revolution topic" (Woodham 2009:266).
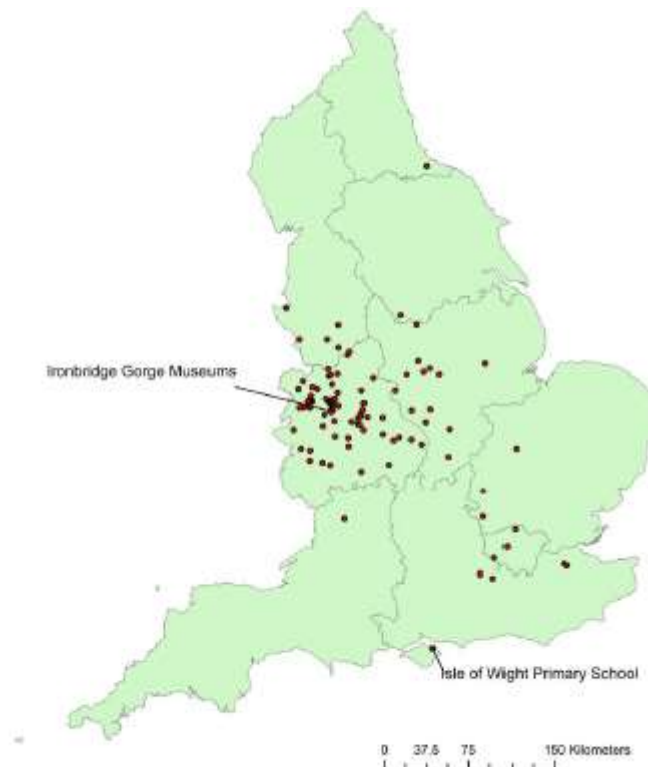
Figure 14: Map showing the school visits from all datasets to Ironbridge Gorge Museums recorded during the Renaissance in the Regions programme (2002-10). Source: Woodham 2009:267

IGMT was identified as being atypical in having a broader reach attracting schools from outside the region including the east and south east of England, it was the museum "exhibiting the greatest range of distances travelled by schools (250.5 km) [155.7miles]" (Woodham 2009:251). Woodham (2009:254) calculates that the average distance to IGMT was 55.5km [34.5miles], with the maximum distance recorded during Renaissance in the Regions (1 and 2) being 250.5km [155.7miles] and the minimum distance 1.8km [1.1miles].

Residential learning is therefore an important element of the Ironbridge Educational Model. In the UK, World Heritage Sites have developed residential

educational provision aimed at increasing educational visits. Residential centres and partnerships with the Youth Hostel Association (YHA), for example at Ironbridge, Hadrian's Wall, Jurassic Coast (Davies 2014:35,62,113) and it is being considered at Stonehenge and Avebury WHS (Simmonds and Thomas 2014:155). In the 2012 best practices initiative by UNESCO, the residential offer at Maropeng, Cradle of Humankind WHS, South Africa was also identified (UNESCO 2012). Residential learning provides immersive access to the WHS, and the resulting benefits are widely recognised, most recently by Kendall and Rodger (2015), for example students' sense of community; their confidence; and achievement and engagement in learning (Kendall and Rodger 2015).

- Overseas educational groups are regular visitors to the Ironbridge Gorge

From the 2014 booking data, 6% of educational visitors were from overseas. Whilst the booking data does not record the school locations for the overseas educational visitors, the IGMT learning team confirmed McLoughlin (2008:6) who noted that most of these are from France. This is comparable with the Blaenavon WHS who report a similar trend in a high number of French students , the Giants Causeway who receive a high number of American educational visitors, whilst overseas educational groups made up 67% of all educational groups at Stonehenge in 2008-09, with 28% coming from France (Carver and Greaney 2011:43). Further research is needed into this trend, as it is beyond this scope of this research.

- Weeks leading up to school holidays are the peak times for educational visitors

June is the busiest time for educational visits; this is linked to the end of the academic year, when there is greater flexibility in the curriculum for out of the school trips, before the summer holiday break. This data corresponds with Cooper and Latham's (1988:259) research which identified that the summer months (April to July) were the busiest months for school visits. The other peaks in educational visits correspond with the weeks before school holidays, Easter half term, summer holiday term and the October half term. There is an increasing trend for enrichment or activity weeks (often resulting in a residential visit) especially for Secondary Schools (Cooper and Latham 1988:261) is due to curriculum and teaching cover pressures (Paton 2010). Educational visitors are therefore an important source of revenue; given that they occupy the off-peak tourist season (peak tourist season being school holidays).

The demographics of IGMT's educational visitors outlined above provides an important source of understanding about the use of the Ironbridge Gorge as a learning resource, but also an important framework for the research fieldwork and participant sample selection.

3.7-WHS and School Relationships

The heritagisation of the Ironbridge Gorge resulting in the 1986 WHS inscription and development of formal education provision by the IGMT highlights how both the heritage value and educational value of the Ironbridge Gorge has been formalised and consumed. The quantitative data is a clear measure of the educational value of the Ironbridge Gorge and success of IGMT as an educational charity and independent trust. IGMT's success is also evident in its success in the quinquennial Sandford Awards for excellence in heritage education which has been won by Blists Hill (2007,2012), Coalport China Museum (2007,2012), Enginuity (2008,2013) and Jackfield Tile Museum (2008, 2013). This award-winning education service is something that that Trust are very proud of, and are keen to stress, is one of their unique selling points (IGMT 2011:6). A 2013 market research survey for IGMT of visitors and non-visitors identified that 95.1% of respondents thought Ironbridge was "good for a school visit" (Telford Development Partnership 2014:33-4).

A source of authority on the educational value of WHSs, which has been overlooked is the national educational inspectorate- Ofsted in England and Estyn in Wales, however they have been identified as a measure of success for the Jurassic Coast WHS (Ford. N.d). Analysis of school inspection reports reveal several examples where educational visits to Ironbridge Gorge has been recognised as examples of high educational standards. Inspectorate reports from both England and Wales were analysed to identify examples of where visits to the Ironbridge Gorge were recorded as supporting formal learning. Visits to Ironbridge Museums by Welsh primary schools were noted, for example "a visit to

Ironbridge helped to bring the period alive" (Estyn 2007:35), whilst at another school it was noted that "Year 6 pupils speak knowledgeably of the lives of pupils in Victorian times, following visits to Iron Bridge industrial museum" (Estyn 2012:5-6). The focus is however on the museums of the IGMT rather than on the added value of the World Heritage inscription.

The most engaged educational institutions are those which are local (or even situated in) to the WHS- also known as Guardianship Schools. This is where physical access and communication is easier and the site familiar through local experience and awareness (UNESCO 2016b:74). Such schools have engaged in school twinning (Debevec 2012:35,38-9, UNESCO 2003b:18 and UNESCO 2004d:19) and the 'adoption' of local heritage sites (UNESCO 2007:70-71). Whilst in Colombia, since 2009, a Heritage Guardians programme has been funded by the Ministry of Culture to get students engaged in their final year of high school engaged with their local heritage (Jaramillo 2018). For example at the Mompox WHS, 81 students from 5 local schools were trained at 'First Responders' in light of annual flooding, whilst at the National Archaeological Park of Tierradentro WHS, local indigenous students have become regular tour guides (Jaramillo 2018:142-143). In the UK, a good example a Guardianship school is the Amesbury Archer Primary School, who have had a partnership with the Stonehenge and Avebury WHS since 2007 (Carver and Greaney 2011:44).

In the Ironbridge Gorge WHS management plan, an ongoing action plan objective is "WHS awareness raising with local schools" (IGMT 2017d:76). The World Heritage inscription is not mentioned in most inspectorate reports for schools within or surrounding the WHS, thereby questioning to what extent Ironbridge

Gorge is an example of local heritage as a catalyst for high educational standards or through its the global significance and international links relating to the WHSs and "heritage-scape" (Di Giovine 2009). Local heritage/museum based learning is widely promoted for example as discussed by Dixon and Hales (2013) and is the basis of Historic England's Heritage Schools Programme (English Heritage 2014, Gvyes 2014). If schools can embed local heritage/museum resources with their curriculum requirements, and foster human values, what is the role for WHSs?

In a 2002 Ofsted report of the Coalbrookdale and Ironbridge Church of England Primary School, the importance of the local heritage as a learning resource is recognised and commended:

"The school is situated in the midst of the Ironbridge Gorge, surrounded by museums, parks, woodlands, historical buildings and monuments. The school takes full advantage of these. The curriculum framework used by the school shows how they rely heavily on the environment immediately surrounding the school. Staff provide pupils with opportunities to visit places of interest, such as, the museum associated with the iron works and bridge building".

Ofsted 2002:14

The use of the Ironbridge Gorge as a local outdoor learning environment, close partnership with IGMT and use of the heritage assets as cross curricular resource reaffirms the benefits of Guardianship Schools. This example confirms the cross-curricular value of the Ironbridge Gorge, through both educational visits and partnership projects.

Importantly the relationship between heritage education and the fostering of human values was also evident in the 2002 Ofsted report. It stated that "pupils'

spiritual and moral development is enhanced by the links that the school has established with the local churches and local community… this adds to the pupils' local knowledge and deepens their understanding and respect for their local environment"(Ofsted 2002:14).

However, in the 2011 report for the same school, the benefits of having the WHS as a local learning resource is directly confirmed as it concludes that:

"Many activities are based on real life experiences, visits and visitors and the school uses its location close to a world heritage site to promote pupils' love of learning extremely well. As a result, pupils enjoy school and it is no surprise that attendance is high. One pupil's comment is typical of many: 'I love coming to school.' An exceptionally wide range of partnerships with local schools and community groups, together with extensive international links, promote outstanding community cohesion by providing exciting learning opportunities for all pupils. These ensure they respect and value views that may be different from their own".

Ofsted 2011:4

This very rare example confirms the importance of WHS as a learning resource, especially for Guardianship schools. It confirms the potential of WHSs as outlined in the literature review, as there is evidence of both the fostering of ascribed and human values.

Given that Coalbrookdale and Ironbridge Church of England Primary School is situated within the WHS, this research will aim to identify whether this is an exceptional relationship, between a school and a local heritage site, or whether schools (local, national, international) who engage with the Ironbridge Gorge

WHS, similarly fully utilise the educational potential as both a heritage and world heritage learning resource.

3.8-World Heritage Education at the Ironbridge Gorge WHS

Despite thirty years of education provision by the IGMT, in terms of World Heritage Education, the first phase periodic report stated that "there is no education strategy for the site but there is a considerable amount of educational activity undertaken within the WHS" (UNESCO 2006:4). By the second phase report in 2014, the situation was reported to have improved as it was noted that there was "a planned and effective education and awareness programme" and that "World Heritage status has been an important influence on education, information and awareness building activities" (UNESCO World Heritage Centre 2014). No specific examples were provided; this research will provide a more in-depth analysis of World Heritage Education provision.

In addition to the absence of a World Heritage Coordinator, and unlike other UK WHSs, the Ironbridge Gorge WHS steering group does not have a WHS education subcommittee or WHS wide learning officer/coordinator. Davies (2014) discusses examples from Maritime Greenwich, Jurassic Coast, Blaenavon, New Lanark, Hadrian's Wall and Stonehenge (Simmonds and Thomas 2014:50). These groups comprise representatives from organisations that have an educational offer within the WHS and often work towards a WHS learning strategy, collaborative projects and resources/marketing. As noted with the Stonehenge example the group aims to "avoid duplication" (Simmonds and Thomas 2014:154), whilst at Hadrian's Wall, the group aimed to "build on strengths of existing providers- with the aim of complementing not competing" (MingStones 2006:15). The importance

of such groups was confirmed in a recent UNESCO UK report, with all WHSs agreeing that "World Heritage steering groups provide a banner under which disparate organisations can come together with a shared, common purpose that – without the UNESCO association – they otherwise would not have" (UNESCO UK 2016a:72). Whilst Schneider (2013:147) identified that such educational steering groups catalyse the benefits of including partnerships, funding, media attention, and increased knowledge. Without a dedicated learning officer, McDonald (2013:275) proposes that it is "allocated a low level of priority", resulting in 'a downward spiral' and marginalisation.

World Heritage Education is embedded in the 2001 World Heritage Management Plan, through the aim "to increase public awareness of and interest in the WHS and to promote the educational and cultural value of the historic landscape" (Telford and Wrekin Council 2001). Earlier in the chapter, the extent to which the World Heritage was communicated onsite through interpretative media was outlined. This is not only at the heart of the WHS management strategy but also an important part of the learning environment, part of the "narrative environment" (Kirk 2014), and will therefore be considered during the research fieldwork.

As discussed in the preceding chapter, World Heritage Values can be communicated through learning activities based around the understanding of values and attributes. A recent outreach session (What do we value? The Museum of me) has provided a potential model for communicating World Heritage Values at Ironbridge (Appendix 4). Adapted by the IGMT Lifelong Learning manager, from activity developed by the Derwent Valley's Mill World Heritage Site (DVMMHS)

education team- Derbyshire Environmental Studies Service (DESS) (Cass and Rogers 2014). The IGMT pre-visit outreach session was piloted with a local secondary school, Abraham Darby Academy, Telford in 2015. The classroom based session involved the students creating a Zine. A Zine is a booklet created by folding an A3 size paper. Once the students created their zine, they were asked to fill it with words and images about their heritage- the things that were important to them. This exercise is designed to introduce the students to the concept of heritage, personal values and attributes. This pre-visit activity therefore supports a visit to the World Heritage Site, as the students can relate to the heritage values and attributes, understanding the global values through understanding the personal and local nature of values and attributes, thereby understand the OUV of the WHS. This is the only resource developed to specifically communicate World Heritage values to educational users. However, this IGMT session is currently in development and it is hoped that in the future it could be included within the existing offer as a suggested pre-visit classroom activity.

As evident from Appendix 2 and as noted in this chapter, there are only two resources within the IGMT learning programme which foreground the World Heritage inscription. This does raise the question, how are educational users supposed to know about the opportunities for learning through the World Heritage designation if there are no supporting educational resources provided by the educational provider.

Aside from the development of resources, World Heritage values are communicated primarily through one-off educational projects. Examples of these include:

- The 'Telford Schools World Heritage Project' which was run jointly by Telford HE College, the Borough of Telford & Wrekin and IGMT between 2012-2014 working with local schools.

- The 2009 national government funded Find Your Talent programme (2008-2010) in which IGMT partnered with Telford and Wrekin Council on The Ironbridge Time Machine learning project as part of the World Heritage Festival (Creativity, Cultural and Education 2010a). Telford and Wrekin Council worked with 164 young people (7-19 years old) from across the borough in designing and displaying a boat (floating installation), through which they learnt about world heritage and "the significance of the Ironbridge Gorge site on the world stage".

- Another Find Your Talent programme project in 2009 was the My World, Your World, Our World school workshops which aim to develop cultural understanding and tolerance (Creativity, Culture and Education 2010a, b, c). As with the other projects, a creative approach adopted with the WHS and IGMT museums as learning resources of inspiration developing personal and social skills and values.

- In 2008, the National Centre for Excellence in the Teaching of Mathematics (NCETM) funded a teaching training project 'Maths in real contexts' for teachers in Shropshire and Telford and Wrekin, using the resources of the Ironbridge Gorge WHS to "develop mathematics in real contexts (practical, cultural and historical) for secondary pupils" (Coombs 2008).

- As part of Takeover Day 2015 (a national initiative by the charity Kids in Museums- where young people organise events and projects in

museums), IGMT worked with students from Telford College of Arts and Technology, to evaluate the current interpretation at the Museum of Iron and the Old Furnace. Student's recommended that a trail or treasure hunt, perhaps through a digital app, be developed. They proposed that it be character led, telling the story of why Ironbridge is a World Heritage Site.

This fieldwork at the Ironbridge Gorge WHS considers for the first time the extent to which World Heritage values are embedded within the onsite learning experience rather than project based learning outlined above.

3.9-Chapter Conclusions

This context chapter has introduced the research case study site of the Ironbridge Gorge WHS. It has defined the OUV and World Heritage Values of the WHS alongside the development of the Ironbridge Gorge as a heritage site. For the first time, it has outlined the development of educational provision by the IGMT and its unique educational model, which sets the context for the fieldwork which will evaluate current provision in terms of the communication of World Heritage Values.

In 1979, Cossons viewed the Ironbridge Gorge "a library, a place where with careful selection, it is possible to study a great variety of themes, drawing in many different academic disciplines" (Cossons 1979:184). Furthermore, he hoped that educational visits would be "a carefully prepared and highly selective experience embracing not only museum sites but the numerous other historical and

environmental features of the Gorge" (ibid). Since then, IGMT has gone from strength to strength in terms of heritage management and education, evident in today's educational visitor numbers, heritage education awards and centrality in local, regional and national education.

The Bratislava World Heritage Youth Forum Declaration (2002c) stated that "World Heritage Sites set standards of educational approaches for other heritage sites". The educational model developed by IGMT across the Ironbridge Gorge WHS certainly confirms this through pioneering live interpretation, the demonstration and participatory museum, residential learning, the diversification of educational provision (online and cross curricular), becoming a regional and national education centre; reaffirmed by high numbers of educational visits, recognition of the site as a learning resource and through national awards such as the Sandford Awards.

However, the extent to which World Heritage inscription has changed this is questionable, as is the extent to which World Heritage Values are embedded in the onsite learning programme. This chapter has outlined not only how World Heritage Values are communicated through site management, outreach events and onsite interpretative media, but also formal and informal learning programmes and resources developed by the IGMT. This reaffirms comments from Glen Lawes, the former Chief Executive of the IGMT, who proposed that "we have all come a long way since [gaining World Heritage status in] 1986, but I don't think we are anywhere near to presenting the Gorge in a way that immediately suggests World Heritage" (Beale 2014:117). The development of the Ironbridge Gorge as a learning resource and the impact that the 1986 inscription and new

values association with it, confirms with the statement that "most UK sites were important educational assets long before they gained WHS status" (PricewaterhouseCoopers 2007:13).

This research therefore builds on this overview of the development of the Ironbridge Gorge WHS, use as a learning resource and identification of if and how World Heritage Values are communicated, through an analysis of the onsite learning process. The next chapter, will establish the methodological framework for the fieldwork.

Chapter Four: Methodology

4.1- Introduction

To answer the research question: How are World Heritage values communicated within the onsite learning process, a three-stage mixed methodological process was developed. This chapter builds on the preceding chapters to provide a critical overview of the research methodology.

Developed from the literature review, the methodology was designed to identify to what extent World Heritage Values (as defined in the literature review) were communicated and embedded within the onsite learning process. The methodology discussed in this chapter provided the structure to assess if and how World Heritage Values were communicated and understood by educational visitors to the Ironbridge Gorge WHS. A three-staged mixed methodology focussed on communication through the lens of the teachers and the IGMT was developed.

Firstly, the institutional access and research stage was based upon an identification of current educational resources and programmes developed by the IGMT for onsite learning. The IGMT datasets included quantitative data (educational visitor- number of visits and demography) and qualitative data including the identification of current educational offer (workshops, resources etc.). This enabled an overview of the IGMT as the primary educational institution within the WHS to be developed as set out in the preceding context chapter.

Secondly, the observation of educational visits to a sample area within the Ironbridge Gorge WHS allowed for a greater understanding of the structure of educational visits and pedagogical content teachers and IGMT staff. This was a

passive observation with a focus on the pedagogical approaches and communication from the teacher/IGMT staff.

Finally, a post-visit interview was undertaken with the lead teacher from the observed educational groups. This was designed to collate the teacher's experience of using the Ironbridge Gorge WHS as a learning resource and to discuss the relationship between the teaching community and the learning resources and opportunities. The questions were aimed to identify if and how, World Heritage Values are communicated within onsite learning experience.

What follows is an in-depth discussion and reflective evaluation of the inductive research methodology. This chapter presents the mixed methodology and methodological decisions in the chronological order in which they were taken, as illustrated by Figure 15.

4.2-Methodological Approach

To answer the research question, it was essential to understand the purpose of and motivations for such visits, the geography of formal educational visits, and the pedagogical style and pedagogical content of educational visits to the Ironbridge Gorge WHS. A qualitative strategy was required to go beyond the common quantitative understanding of educational visits, thereby requiring interviews with individuals and observation of the visits to the WHS by school groups.

The adoption of a qualitative research strategy over a quantitative one follows the research culture of the field of education, given its "more people-centred approach" (Atkins and Wallace 2012:21) for which qualitative research is better suited. As recognised by Flick (2014:10) it enables the use of data collection

methods which capture value judgements and "thick descriptions" and a degree of flexibility given the real-world contexts (Cohen *et al* 2011:153). A qualitative research strategy is an inductive constructivist approach which allows theory to emerge from the data being studied (Newman and Benz 1998:20). This allows for a Grounded Theory approach, to move from the specific to the general; from initial observation, to the collection, processing and interpretation of data and, finally, the production of theory (O'Donoghue 2007: 57). A qualitative research strategy was therefore important to frame the fieldwork within the Ironbridge Gorge WHS ensuring that the right datasets were collected and analysed resulting in the research question and objectives being answered and for the voices of the staff and volunteers from the WHS and visiting teachers from school groups to be heard.

Ethnographic approaches were drawn upon and formed the basis of the qualitative research strategy, with observation and interviews providing the primary forms of data collection. Flick (2014:536) defines mixed-methodology approach as "a research strategy combining different methods, but based on participation, observation and writing about a field under study". This approach was essential to gain a first-hand experience of educational visits to the Ironbridge Gorge WHS and thereby identifying and recording the geography of the visits, pedagogical style and pedagogical content for the first time at the WHS.

Building on the literature review, which confirmed the limited research into World Heritage Education, tried and tested research methodologies and frameworks from other research areas informed this research methodology. The fields of museum education and heritage education research were where the research

methodologies of most value were to be found. The research methodologies were qualitative mixed methodologies based upon observation of educational visits to museums or heritage sites and included interviews pre-visit and post visit with either the teachers or the students. Examples of such research include Griffin (1998), Tsai (2002), Kostarigka (2010) and Spalding (2012). Adopting tried and tested aspects of research methodology from the fields of museum and heritage education, along with research standards from the field of education research, allowed for a research methodology and framework to be developed to answer the research question. Given the research question which foregrounded understanding the onsite learning process through the lens of the educational providers (educational officers, volunteers and lead teachers), there was no in-depth analysis of the pre-visit or post-visit learning process. A short discussion is provided in the analysis chapters and recommendations for further research in this area are made in the final chapter.

As described above, a three-stage mixed methodological process was developed-Institutional research, Observation, and post visit interview. Figure 15 illustrates the chosen methodological approach through a flowchart based on the linear model of the research process, as adapted from Flick (2014:137). This demonstrates the chronological stages of the research drawn from the qualitative strategy identified from the start of the research process. This linear model guided the fieldwork to ensure that it was "focused and achievable" (Anderson and Freebody 2014:94).

Figure 15: Flowchart outlining the qualitiative research process. Adapted from

Flick 2014:137.
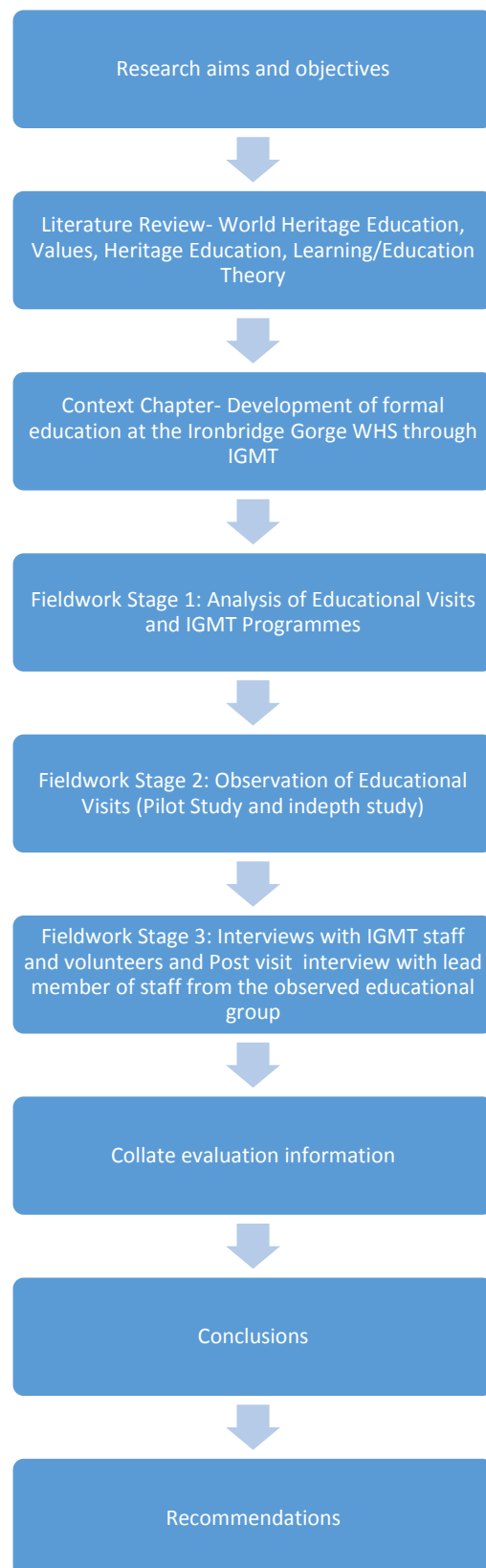
4.3-Research Question and Objectives

Given that this was an Arts and Humanities Research Council (AHRC) funded Collaborative Doctoral Award (CDA), the doctoral research had a predefined case study (the Ironbridge Gorge WHS) and an area of focus described as "the ways in which a World Heritage Site is implicated/active in education programmes and the onsite learning processes relating not only to site histories but to the ideas of transnational, universal value implied through World Heritage status and the discursive agendas of UNESCO" (University of Birmingham 2014). This research was part of the wider CDA with its focus on examining "the relationships that World Heritage Sites share with different communities of interest" (University of Birmingham 2014). The CDA is a good example of "World Heritage-targeted research addressing the management needs of the property" (Young 2016:196).

Bailey (2017:42) states that "the research question is the specific question that the research is intended to answer" and that it is anchor of the research process. The early stages of the research focussed on developing the research question which was defined by the specified CDA requirements. As a result of the literature review the following research question was agreed upon: How are World Heritage values communicated within the onsite learning process.

The research aim was to explore if and how World Heritage values are communicated during school visits to the Ironbridge Gorge WHS. Through the case study of the Ironbridge Gorge WHS, this research was focussed on further understanding the educational role of UNESCO's World Heritage Sites through the two core aspects of the process of communicating the concept of Outstanding

Universal Value and the relationship between the learning process and value of World Heritage Sites.

In addition to the formulation of a research question and aim, specific objectives were also needed. Mligo (2016:66) note that objectives are needed as they outline what "you want to achieve in the research process". Clearly defined and answerable objectives drawn from the research question are important as they guide the data collection and analysis. For this research the following research objectives were developed:

Research Objective 1: To what extent are World Heritage values embedded in the onsite learning process (school visits and workshops at the site)?

Research Objective 2: To what extent does being a World Heritage Site inform the educational experience?

Research Objective 3: How is the World Heritage concept processed by the visiting educational groups?

Research Objective 4: What are the implications for World Heritage Sites and Education globally?

The four research objectives were developed to ensure that the research question and aim was answered by considering the impact of World Heritage designation on the development of learning programmes and the learning experience of visiting schools to the WHS, if and how the communication of World Heritage Values can be observed during school visits to the WHS and what the micro scale evidence at the Ironbridge Gorge WHS can tell us about the macro scale of WHSs and World Heritage Education.

4.4-Research Case Study Characteristics

Given the number of WHSs and the thousands of educational institutions there are, it was important to establish research parameters to achieve a realistic research project. The AHRC Collaborative Doctoral Award Studentship was in partnership with the IGMT, the primary educational provider within the Ironbridge Gorge WHS, thereby providing institutional access to the Ironbridge Gorge WHS. As the largest stakeholder in the Ironbridge Gorge WHS and given that they hold the service level agreement for the WHS management, it further justified the sole focus on IGMT. With the Ironbridge Gorge as a case study, the research responds to Fyall and Rakic's (2006:173) call for further research of WHSs "at the micro site level".

As defined in the literature review, whilst the learning process is recognised as being lifelong, this research concentrates on the onsite learning process. As there was only one case study, all references to the educational landscape and curriculum relate to that of England. Examples from elsewhere in the UK are utilised in this research however to support arguments and the fieldwork datasets.

The educational landscape (in England) is diverse and "fast changing" (Arts Council England 2016:6) with a range of educational institutions: state, public, private, academies and free schools. It includes Primary and Secondary Schools (National Curriculum and GCSE Specifications) as well as Pre-school, Further Education, Higher Education, SEN (Special and Educational Needs), Home educated, teacher training, Lifelong learning visits and international educational visitors. This research was focused on educational visits to the Ironbridge Gorge by all types of

UK based primary and secondary schools, given that they form the majority of educational visitors to the WHS. Rather than comparing the experience of school types within the WHS, a broader understanding of the experiences of all schools was sought in order to answer the research question and aim in relation to which World Heritage Values are communicated within both primary and secondary school educational visits.

In the literature review, the delivery of World Heritage Education at three different levels was recognised. Given the research focus on understanding the site level and in particular the onsite learning experience of visiting schools, the site level was foregrounded in the literature review and analysis. Classroom learning at the school level was not discussed in detail and neither were the global programmes or resources such as UNESCO's World Heritage Education programme and the WHYH resource. These were refered to only in order to contextualise the educational role of WHSs, the relationship with the curriculum and in the identification of distinct pedagogies associated to World Heritage Education.

4.5- Stage One: Institutional access and research

The first stage was to establish access within the case study institution- the IGMT Learning Team, as introduced in the preceding chapter (Flick 2014:159). Access to the IGMT provided a greater understanding of the organizational culture (position of learning within IGMT), informed the evaluation of current provision and sampling strategy. Developing a close relationship with the educational administrator was essential, as they managed the educational bookings and were the primary contact for providing contact details for research participants. The

problems of institutional access, as identified by Wolff (2004), including data protection and intrusion, were recognized and minimized early on, as the research scope and content was approved by IGMT.

Institutional access provided initial data for the context analysis, as outlined in the context chapter. This comprised the analysis of educational visits to IGMT museums during 2014-15. This evaluation of the current educational offer identified the variety of educational user groups that were (or not) engaged with the WHS. This analysis informed the context chapter but also the observation sampling and research timescale.

Two sets of educational data were obtained from the IGMT Education department. The first was collated data direct from the booking system. When schools want to book a visit to an IGMT museum or workshop, they call directly to the educational administrator, as at present there is no online booking system. Schools can book directly over the phone or through a paper booking form that is sent out with an education pack upon request. All schools who visit IGMT museums book in advance, this is important to avoid over-crowding, for example at the Darby houses where school groups must be divided into groups of 15 given the limited visitor capacity. School bookings are recorded through the ICARIS online system and in a physical diary. The 2014-15 dataset was the latest full sets of data available at the time of the fieldwork.

The second dataset came from the 2011-2012 Renaissance Research Project in England. From 2002, the Department for Culture, Media and Sport through the Museums, Libraries and Archives Council, funded a scheme called 'Renaissance in the Regions' through a network of museums known as 'hubs'. Renaissance aimed

to raise standards and support education, learning, community development and economic regeneration (Beale 2014:101-2). IGMT's inclusion in the West Midlands hub led to a period of investment in education programmes and organisational evaluation, to share best practice and capacity building. Through the development of new resources, workshops, loans and outreach services for all ages, the number of school children taking part in taught sessions rose fourfold, with 285,952 at IGMT museums between 2004-10. During this period, there were cycles of reporting and evaluation (Hooper-Greenhill *et al* 2004, Hooper-Greenhill *et al* 2006a-c). Renaissance data was important as it recorded school location details and the age of visiting school groups. Hooper-Greenhill *et al's* (2004:34) research into museum education included IGMT however provided a warning about the analysis of educational visit data. Hooper-Greenhill (2004:34) noted that given the multi-site structure of IGMT, pupil data was difficult to define given that 'pupils who visited more than one site during the day were counted at each site', resulting in significantly higher than average pupil contact figures than the other museums in the study. This was important in understanding the context of the datasets, resulting in low quality data as pupils are recorded more than once in many instances. Furthermore, this data formed only one part of an understanding into the quantitative educational value of the Ironbridge Gorge WHS, as it only records educational visitors booked to visit one or more of the IGMT museums and workshops within their learning programme. It did not include educational visitors who visited other sites within the WHS, or took part in learning activities provided by alternative providers such as the YHA and other residential providers, the Severn Gorge Countryside Trust or visits solely led by teachers.

The desk based research which informed the literature review and context chapter was based on Strauss and Corbin's (1998:49-52) identified aims, and with a focus on the identification of theoretical, methodological and empirical literature (Flick 2014:72) which would inform, update and provide a framework for the research. Where possible past formative and summative evaluation (Hein 1982:56-7) of educational provision at IGMT was identified, and consulted, thereby providing a greater understanding of the development of museum and heritage education within the Ironbridge Gorge WHS. Archival research was undertaken at the IGMT Library and Archives located in the Long Warehouse in Coalbrookdale. This process comprised the identification of educational resources by IGMT including online and physical resources, educational programmes and workshops for onsite learning (Appendix 2), with prioritising those related to Coalbrookdale. Classroom based resources were not included given the focus on the onsite learning process. For the same reason, UNESCO's World Heritage In Young Hands Kit (UNESCO 2002b) was not analysed at depth or included within the wider research methodology. This literature analysis contributed to the context chapter in understanding the development of educational provision by IGMT but also the position to which the world heritage values are embedded within the current onsite learning process.

Finally, interviews with the IGMT Lifelong Learning manager and four members of staff from the IGMT Coalbrookdale museums, provided an important source of information for the evaluation of World Heritage Education Provision. The interviews were Semi Structured Interviews, based on Flick (2014:217). It was essential to interview the Lifelong Learning manager for the IGMT at the start of the fieldwork process in order to gain an understanding of the extent to which

World Heritage was a priority for her and her team when designing and delivery new resources and workshops as part of their onsite learning programme. Examples of the questions asked during this interview include 'What impact do you think the 1986 inscription has had in terms of educational offer and value at IGMT?' and 'Do you think that current students leave the site knowing it is a World Heritage Site?'. Interviewing staff and volunteers provided greater insight into the realities of front of house and onsite learning programme delivery. This was important as it was realised that the agency of the staff, volunteers and teachers were a key variable in the communication of World Heritage Values. In addition to questions about the onsite educational experience and their role within it, examples of the World Heritage specific questions included 'Do you think it is communicated that the Ironbridge Gorge is a World Heritage Site during educational visits here?' and 'Do you think it is important that students leave knowing it is a World Heritage Site?'.

4.6-Stage Two: Educational Observation

The second stage of the research was educational observation. During the 2015-16 academic year (September to June in the UK), 13 school visits (excluding the additional post visit interview for a non-observed group) provided a focus for in-depth observation. Observation formed the basis of the research methodology, aiming to identify and record evidence for the communication and interpretation of World Heritage Values at the Ironbridge Gorge WHS.

The observation focussed on the teachers from the visiting educational institutions and IGMT staff (where IGMT were leading activities). The agency and centrality of the teachers was recognised, in that they are the 'gatekeepers' of

knowledge, activities, authority, values and curricula decisions (Thornton 2005:1).

Anderson, Kisiel and Storksdieck (2006:367) concluded that "teachers play a pivotal role in the learning experience during a field trip" and that "the educational worth of a field trip may be heavily dependent on the agenda of the teacher leading it". Griffin (2012:115) concludes that "the school teacher, as well as the museum educator play large roles in the process but the final learning is individual, varying among and between students". This evidence from the literature review reaffirms the importance of the centrality of the study of teachers in the research and justifies the chosen methodology. Teachers are the ones communicating directly to the students and facilitating the learning onsite, through the resources provided by the IGMT. Considering this, it was essential that their experience and practice became the focus of the research study.

Given the scale of the Ironbridge Gorge WHS and to make the research achievable, observation was limited to self-led visits, guided visits and workshops in Coalbrookdale (Darby Furnace, Museum of Iron, Darby Houses and Enginuity) by selected educational groups. One-off projects and outreach programmes were not included. As noted in the context chapter, whilst Blists Hill is the most visited site by schools, it was not prioritised in the research as was not primarily inscribed in the WHS. Furthermore, the Iron Bridge was not prioritised given the access barriers and ephemeral nature of educational visits to it.

The observation recorded the geography of the visit, what was being communicated to the students and how they were being communicated. The field notes were on the 'pedagogical style' and 'pedagogical content', as coined by Hooper-Greenhill 2007 in Zarmati (2012:78). Pedagogical style is defined as the

"participative and performative modes of learning" as well as the "the style of communication in displays, the way objects are used or placed, the way text is written, forms of sensory engagement", whilst 'pedagogic content' is defined as the subject matter of teaching.

The sampling strategy was based on defined qualitative sampling dimensions (Flick 2014:168, Cohen *et al* 2011:44). Given the fieldwork environment, a purposive sampling strategy was adopted. Purposive sampling can be defined as "a non-random sampling technique in which the researcher solicits persons with specific characteristics to participate in the research study" (Johnson and Christensen 2013:264). Selection was determined by access to and availability of research participant groups, primarily participation consent. It was dependent on the number of educational visits booked to visit Coalbrookdale museums, the type of activity and length of visit, and on the booked educational visits to IGMT museums. The analysis of 2014-15 educational visits allowed for a greater understanding of the demography, format and structure of educational visits to be understood. Through the educational administrator access to advance booked educational visit information (2015-16), enabled a sample to be selected. The main criteria were that the schools were booked to visit one or more of the IGMT Coalbrookdale museums.

The sample criteria were:

- UK Primary or Secondary School (irrespective of governance structure)

- Advance booking to one or more of the IGMT Coalbrookdale museums and/or workshop

- Booked for within the research period (pilot study in March 2016 and observation period in June 2016).

- Participants gave consent to both the research observation and post visit interview

Once a suitable school was identified, a participant information letter (Appendix 5) and consent form (Appendix 6) was emailed out to the educational institution prior to their visit for a decision to be made by the lead teacher of the trip.

There was no predetermined sample size. The sample size was to be large enough to generate "thick descriptions" (Onwuegbuzie and Leech 2007:242). The sampling strategy followed similar research methodologies into formal educational visits to museums and heritage sites, such as Griffin (1998), Tsai (2002), Spalding (2012) and notably Kostarigka (2010). Following Kostarigka (2010:150) "schools were contacted at random, and selected for inclusion depending on their willingness to participate". One class visit per school was followed- until it was judged that "saturation had been achieved" (Kostarigka 2010:150). Kostarigka (2010:150) justifies this approach as it meant that 'analysis ceases as soon as categories coded begin repeating themselves and the researcher becomes "empirically confident that a category is saturated" (Glaser and Strauss, 1967:61). This research methodology is also comparable with Zarmati (2012:124) and Savenije (2014:29) who focuses on capturing the learning experiences and processes instead of the learning outcomes.

A pilot study was undertaken to refine the observation methodology e.g. how to record what was being communicated by the teachers and educational staff to the students. Four schools were chosen (and gave their consent) to observe their

visits in the last weeks of the spring term before the Easter break (March-April 2016). They were three primary school visits and one secondary school visit. The pilot study was important as it provided an opportunity to reflect on and correct the methodology both in the observation and post visit interview. As Yin (2015:39) concludes, "pilot studies help to test and refine one or more aspects of a final study" including logistical issues, fieldwork procedures and data collection methodology. One of the main outcomes of the pilot study was that it made more sense to follow the school over the complete day visit rather than their visit to solely the Coalbrookdale museums (Museum of Iron, Darby Houses, Enginuity and/ or the Darby furnace). For example, there was the observation of a primary school visit to both Enginuity and Blists Hill on one day and the observation of another primary school visit to Enginuity, the Coalbrookdale archives, Rosehill House (Darby House) and Coalport China Museum. Another lesson learnt from the pilot study period was that it was difficult to schedule the post visit interview within 10 days of the observation, given that in nearly all cases the observation was in the middle of a weeklong residential visit. Scheduling interviews was made more difficult when the observations came close to the end of the school term, and any response came after the school holidays. For example, the telephone interview for one of the primary school visits observed during the pilot study was over a month later.

The main fieldwork data collection period had been planned over a two-week observation period (Monday to Friday), with one school a day in the summer term (June 2016). However, the sporadic bookings, the multiple day residential nature of most of the visits and difficulties in confirming participation and obtaining written consent, led to a number of sporadic observations over a three-week

period in June 2016. No distinction was made between types of school and ages of the students in the sampling approach, as the groups were chosen based on their availability and willingness to participate and as the research question sought to understand the communication process amongst visiting educational groups in general. As a result of these fieldwork conditions, research timeframe and in order to allow for sufficient depth of analysis, the sample had to be focussed in both scale and scope, which resulted in a restricted sample size .

In total 13 schools were observed at Coalbrookdale museums within the Ironbridge Gorge WHS, this includes the pilot study schools. Five schools declined to participate, three secondary schools and two primary schools. The difficulty of obtaining parental consent was given by one primary school who noted in their response that they were "on a short visit from London and would have to get permission from 56 sets of parents before agreeing".

Eight primary schools and five secondary schools were observed. 12 were coeducational and 1 was a selective girl's school. Most schools observed were local authority maintained schools, as illustrated in Table 8.

Type of School	Number of Participant schools
Local authority maintained school	3
Academy	2
Church of England school	2
Comprehensive Foundation Trust	1
Independent/Private	1
Community school	1
Grammar school	1
Foundation school considering academy conversion	1
Secondary specialist technology college	1

Table 8 : Table illustrating the types of school which were observed during formal educational visits to Coalbrookdale museums within the Ironbridge Gorge WHS. Source: Author.2017.

Year Group and Age of Educational Groups	Key Stage	Number of Participant schools
Year 5 (9-10)	KS2	4
Year 6 (10-11)	KS2	3
Year 7 (11-12)	KS3	2
Year 10 (14-15)	KS4	2
Year 9 (13-14)	KS3	1
Year 4 (8-9)	KS2	1

Table 9: Table outlining the age of educational visitor groups which were observed during formal educational visits to Coalbrookdale museums within the Ironbridge Gorge WHS. Source: Author 2017.

Table 9 shows the age of the educational groups observed during the fieldwork. Year 6 and Year 5, Key Stage 2 Primary students forming the highest percentages of observed school groups, this is in line with the trends from the analysis of IGMT educational groups data for 2014-15, as discussed in the context chapter. Given

the examination pressures on secondary schools, the fact that primary schools were likely to form most of the sample was expected.

Location of participant schools	Number of Participant schools
London	3
Leicestershire	2
Staffordshire	2
Shropshire	2
Hertfordshire	1
Surrey	1
Sussex	1
Warwickshire	1

Table 10: Table showing the locations of the 13 schools observed during the research. Source: Author 2017.

Table 10 illustrates the location of the visiting educational groups. The distribution follows closely the research and data discussed in the context chapter. Of note is the success of IGMT in attracting schools through residential visits, resulting in a significantly high number of schools from London and the Southeast. Although overseas educational visits were excluded from the sampling strategy, the fact that all participant schools were from England rather than the other home nations, was a product of chance rather than design, however it does reflect the higher number of visitors from England to IGMT properties as revealed by Woodham (2009).

The primary form of data from the observations was field notes (See Appendix 9 for an example). The field notes methodology was comparable to Tsai (2002:126) as "the teacher's teaching-related behaviour, his/her interaction with the students, and responses to the educational services or exhibits in the

museum were also noted…Each piece of paper consisted of four columns for recording four different types of details, namely time, location (exhibits), people (teacher/students), and actions (including verbal words)". Table 11 below, is an example from the field notes of an observed visit of a primary school on arrival at Coalbrookdale (Dataset 30). By recording the time with the location, actions and comments it allowed for a greater understanding of the geography of educational visits to the Ironbridge Gorge WHS both spatially and temporally during the analysis. This follows Spradley's 1980 recognised phases of participant observation data recording:

• "Selection of setting

• Definition of what is to be documented in the observation and in every case

• Descriptive observations- that provide an initial, general presentation of the field, focused observations that concentrate on aspects that are relevant to the research question,

• Selective observations that are intended to purposively grasp central aspects"

(Spradley 1980:34)

However, as Flick (2014:324) recognises, the limitation of this is that "the researcher's selective perceptions and presentations have a strong influence on this production".

Time	Activity	Observation	Teacher Comment	Student Comment
10:16	Group arrives at the fountain told to 'run around on the grass whilst it is nice' Introduction by the lead teacher Students in peer groups on the grass, benches, other looking at the commemorative art sculpture	3 female teachers including the lead teacher	In that pyramid shaped building is the furnace …We will get some nice group photos in there There are people in the Darby Houses I have checked (lead teachers asked staff in the Museum of Iron when checking in) Then we will go to the museum of iron, and get lunch under there (the long warehouse) or on the grass if it is nice	I like the clock Lead teacher: What do you think the fountain's made out of? Group: Iron Student: Why's the water yellow? Lead teacher: stagnant water Group of boys go straight to the commemorative public art- Figure 1. 'It looks like medusa' (one of the panels) Multiplier effect with boys reading the interpretation to understanding what the art panels represent- first group to do so

Table 11: Extract of field notes from an observed visit by a primary school to Coalbrookdale. Source: Dataset 30.

On the day of the observation, their arrival time was confirmed with the front of house staff through the booked times which the staff at the museum (Museum of Iron and/or Enginuity) had for them, before the educational groups arrived by bus. The arrival times provided were estimates and actual arrival times were dependent on travel conditions, for example, one observed educational visit was late by over an hour (Dataset 28), which subsequently put pressure on the visit schedule, the pace of the visit and the learning experience. One of the limitations of the fieldwork was that any introductory words said by the lead teacher to the students on the bus upon arrival were not recorded. Once the group got off the bus, the lead teacher would be identified and greeted and the day's observation arrangements confirmed. At that point the teacher introduced the other teachers,

but not the students. From then on, the lead teachers group was observed (recorded through field notes) until they returned to the bus to depart.

4.7- Stage Three: Post visit interview

The third stage in the mixed methodology was the post visit interview. Following the observation, a post visit interview took place with the lead member of staff from the observed educational institutions.

On the same day as the observation, lead teachers were sent a thank you email and details about arranging a time to schedule the post visit interview. A copy of the interview questions (Appendix 7) was included in the post visit email. It was hoped that the interview could be scheduled within 10 working days of the visit, whilst the visit was still fresh in the participants' mind. However, it became apparent that this was not possible, as in most cases, the visit was part of a weeklong residential, therefore the participant would not get back to the school until the following Monday. Furthermore, some of the observations occurred toward the end of the Easter term or before half term, therefore no response was obtained until after the school holiday, which was over a month in some instances.

The interview questions were designed to reflect on the pedagogical style, content and geography of the observed visit as well as identifying the position of the world heritage narrative in relation to the visit motivations and content. As can be seen in Appendix 7, the interview questions were divided into three sections: visit motivations, onsite experience and relevance of World Heritage designation and communication of the World Heritage Values. Examples of these questions include, 'To what extent did the World Heritage inscription factor in

your visit?' and 'Can you name any way that the Ironbridge Gorge Museums Trust assisted you in communicating World Heritage to your students?'.

The interview was at the discretion of the individual and conducted through a method of their convenience. The participants were given a choice of interview method, either face to face, email or telephone interview, to allow for the most convenient method and avoid disruption given time pressures (occurring at the end of the academic terms, the busiest time of the year) and for the researcher (distance to be travelled for in person interview and cost) (Zarmati 2012:134, Hennessey *et al* 2014, Donnellan 2015:77). For nearly all the participants, the post visit interview occurred through a telephone interview, whilst three opted for an email interview, reflecting the flexibility in the methodology. In total, there were 14 post visit interviews as one school took part in a post visit interview only, this was based on a recommendation by IGMT staff who were impressed by the level of staff planning during a first-time trip by the school in March 2016.

In line with qualitative research practice, once consent was obtained the interviews were scheduled, recorded, transcribed (Appendix 8) and analysed (Flick 2014:43). Semi-structured interviews were undertaken, and as Gillham (2005:70) argues, this method allows for "flexibility balanced by structure, and the quality of the data so obtained". During the scheduled semi-structured interview, the interview script was followed, but often the questions were shortened and follow up questions added. These additional questions were often clarifying points raised from the observed visits and comments made during the interview. The interviews provided important feedback on the current provision based on the

trip, as well as the needs, perceptions and barriers of educators of the WHS as an educational resource with a focus on World Heritage Education.

For telephone interviews, the audio from the mobile phone on speakerphone was recorded through an Olympus Digital Voice Recorder VN-5500PC and saved as a windows media player file (Burke and Miller 2001:3). The file was then immediately transcribed for analysis. Research by Sturges and Hanrahan (2004) and Novick (2008), readdress' early concerns and confirms that telephone interview provides equally valid data to face to face interviewing. Email as an interview method has been recognised as a valid research method (Meho 2006), especially with qualitative research including teachers who find it preferable (Won Hur 2007:44, Hays and Singh 2011:270, Busher and James 2012:224-5). Where there was a post visit interview via email, there was no need to transcription. Often however follow up emails were exchanged to clarify certain points or add additional questions.

4.8-Research Ethics

Research into educational practices, processes and experiences comes with additional required fieldwork safeguards given that the participants are under the age of 16. For this reason, early on it was decided that teachers would be the primary participants (post visit interviews) rather than the students themselves. There was no individual student tracking or student interviews or detailed questionnaires. No audio, video or photographic recording of the educational visitors was undertaken. There was no pre-visit questioning, therefore no specific preparation work was required by the visiting educational groups.

Informed consent was essential given that the research participants were formal educational groups which were being observed and as teachers were being interviewed and recorded. From initial contact with potential participants (visiting schools), a participant information letter (Appendix 5) and consent form (Appendix 6) were emailed out to the lead teacher prior to their visit to gain the consent of the educational staff on behalf of the school. A copy of the post visit interview questions (Appendix 7- Interview script) was also emailed out to the participants (lead teacher) in advance when scheduling the interview.

A DBS check was successfully obtained through the University of Birmingham (Date of Issue 30th August 2015). This was communicated to the participants through the participant information letter. This was an essential as part of the University of Birmingham Ethics Process, given that the researcher was observing educational groups (under 16's). The DBS Certificate was present during the observations. Additional steps were taken at the request of individual schools, for example two schools asked for a copy of the DBS certificate to be sent in advance of the visit, one school asked for a letter to parents before consent could be given, whilst another asked to see university ID upon arrival. University of Birmingham student ID was worn on a lanyard during all the observations, to establish trust and confidence in the research and the researcher.

As part of the ethical process, all participants were anonymised and all data was treated as confidential. No names of individual students and no student data (audio, photographic or video recordings) was collected, and the name of the lead member of the visiting educational group and information about the visiting educational group (contact information etc.) was securely stored and used only

during the data collection phase of the research. The data was stored on a password locked computer accessed only by the researcher. All contact was made through the researcher's university email account, which was password protected and the data was deleted as appropriate. Aside from the researcher, the only people who had direct access to the interview data, following its transcription, were the research supervisors. Following the completion of the research data will be preserved and accessible for ten years in accordance with the Code of Practice for Research at University of Birmingham (2015-2016).

4.9-Fieldwork Dataset Analysis

The field notes were written by hand during the observations, with the time of each activity/location recorded. Following the visit, on the same day, the notes were written up, using a standard template (Appendix 9) using the fields of time, activity, observation, teacher comments, student comments. In total, the observation field notes comprised 39,429 words. At this stage, the field notes often in shorthand were written out in full and expanded upon. Photographs taken of 'hot spots' and discussion points were included in the field notes, acting as an aide-mémoire for the analysis stage. These photographs were taken by the author after the visiting group had left, given the photographic restrictions. In addition, literature review references and annotations were added to back up observational points and points of interest were highlighted, a process which started the first phase of the coding and analysis process. A summary table (Appendix 11) was created to allow for an initial cross-referencing of the variables and results of each visit.

For all the observed visits, the field notes were used to plot the locations on a map of Coalbrookdale to better understand the geography of the visits. The map used was produced by IGMT (2015c) for their access guide which clearly labels not only the museums but also the galleries within them and heritage sites within the surrounding environment. The same was done also for the observed visits to Blists Hill (IGMT 2015d), Coalport (IGMT 2015e) and Jackfield (IGMT 2015f), using the access guides. These maps, like the photographs provided an initial aide-mémoire to record the geography of each visit, but also a first stage in the broader analysis. The second stage was to create a map in ArcGIS within which the core sites visited were plotted. Each was then given a value relating to the number of observed groups which had visited it during the fieldwork observation period, allowing for proportional symbols to be created. This useful map provides an overview of the geography of the observed visits and educational use of the Coalbrookdale area of the Ironbridge Gorge WHS.

As time was recorded during the observations, it allowed for the analysis of the dwell time of visits to be undertaken. By breaking down each visit in terms of how much time was spent at each location and undertaking each activity, this time allocation data resulting in a pie chart for each visit is designed to support the spatial analysis results confirming the geography of the visit and pedagogical observations.

For the post visit interviews and the interviews with IGMT staff, following transcription, points of interest were highlighted, a process which started the first phase of the coding and analysis process. In total, there were over 4hours of semi

structured interview data. A summary table (Appendix 11) was created to allow for an initial cross-referencing of the variables and results of each interview.

Once the data (field notes and transcripts) had been processed into manageable datasets (Appendix 10) and preliminary results could be drawn, they were then coded and triangulated. During this stage the data was separated, sorted and synthesised (Charmaz 2006). This process is known as Coding, as defined by Cohen *et al* (2011:369) it is "the ascription of a category label to a piece of data, with the category label either decided in advance or in response to the data that have been collected". For this research, the coding category labels (Appendix 10) were decided after the data was collected and were defined by the research objectives and datasets.

The datasets were coded using the principles of Grounded Theory thereby enabling the identification of conceptual categories to be drawn from the datasets and the emergence of theoretical concepts (Glaser and Strauss 1967, Charmaz 2006).

In this process the interview data and the field notes were scanned for key words related to the research question through the process known as 'Open-Coding'. In grounded theory, it is important to avoid forcing categories at the early stages (Glaser 1992), so broad categories were created in the first round of coding. The coding process was done manually rather than through the NVivo qualitative data analysis software, due to the small size of the dataset which allowed for a greater depth of hands-on engagement and understanding of the data.

The following coding labels were identified:

- Pedagogical Style

- Pedagogical Content

- Geography of the visit

- World Heritage

This data collection and analysis process enabled key themes to be drawn and discussed. The analysis chapters which follow use the theoretical and contextual framework developed in the proceeding chapters to understand and analysis the datasets. The first chapter focuses on understanding the use of the Ironbridge Gorge WHS as a learning resource and the onsite learning process, whilst the second discusses the datasets within the context of evidence for if and how World Heritage Values were communicated within the learning process.

In the first analysis chapter, a Word Cloud has been used to visualise the data from the post-visit interview question about the curriculum links. As defined by McNaught and Lam (2010:630), a Word Cloud is "a special visualization of text in which the more frequently used words are effectively highlighted by occupying more prominence in the representation". The Word Cloud was created through the online generator Wordle. A recent paper by McNaught and Lam (2010) reaffirmed the validity of Wordle as a supplementary research tool for preliminary analysis especially for transcribed spoken text.

4.10- Reflective Limitations

Holleland and Johansson's (2017) article about insider research (people from UNESCO or associated to it) within the field of World Heritage Studies, identifies how there is "a tendency to not situate the articles within the field of heritage

research at large, and not to engage in any in depth methodological discussions, source criticism and self-reflexivity". These publications, referenced in this thesis, for example Cleere (1996) and Cameron and Rossler (2013), are proven to "accentuate positive aspects of the World Heritage Convention" (Holleland and Johansson 2017:7). As an outsider, an academic researcher not affiliated with UNESCO, this has allowed for greater self-reflexivity, source criticisms, embedding of the research within the wider heritage and education discourse and as this chapter demonstrates in depth methodological discussions. In ensuring the validity of my chosen research strategy several points need to be recognised.

One of the reflective limitations relating to the observational bias is the recognition of the Hawthorne Effect / Observer Effect on the teachers, students and staff as research participants. As defined by Cohen *et al* (2011:246), the Hawthorne Effect/ Observer Effect is "the presence of the researchers that alter the situation as participants may wish to avoid, impress, direct, deny or influence the researcher". Hitchcock and Hughes (1989 cited in Cohen el al 2011:121) recognise that "interviews are interpersonal, humans interacting with humans, it is inevitable that the researcher will have some influence on the interviewee and, thereby, on the data". This reactivity is difficult to limit within the fieldwork, therefore needs to be acknowledged in the results and interpretation. For example, the awareness of the researcher's focus on World Heritage Values and Inscription in the data collections (observation and interviews).

Observational bias and limitations were identified both before and during the study. As summarised by Cohen *et al* (2011:473), these include selectivity in the observation, recording and interpretation. One of the biggest limitations

discovered during the fieldwork, was that given there was a sole researcher only one group could be observed at a time. As a result, the lead teacher's group was nearly always the focus of the observation. This however results in an inaccurate picture of the standard and content of the onsite learning experience as the lead teacher is the one with the most experience, familiarity and knowledge. This reaffirms that there are parallel learning experiences during an educational visit, between different visit groups in addition to the individual learning experience. Another limitation identified during the fieldwork was that observation was impossible in the museum context where there was more than one school group, where all were wearing home clothes and not school uniforms, making the observed group indistinguishable, this happened on several occasions at Enginuity. For example, during the last observation (Dataset 33), there were four different schools in Enginuity as well as a parents and toddlers group and visiting families.

The literature review identified that learning is recognised as a constructivist and personal process; however, this methodology has given prominence to teachers as 'gatekeepers' of the learning process. This approach appears to be contradictory. Children have been regarded as "the best sources of information about themselves" (Docherty and Sandelowski 1999:177). The research however is not evaluating the learning experience, therefore not a longitudinal study, but focussed on the position of the world heritage narrative within the visit geography, pedagogical style and content. Whilst recognising that learning is personal and constructivist, formal educational visits are anchored by the agency of teachers, and their agency shapes what is communicated and how it is received. This explains why teachers were the core participants not the students

themselves. In addition, including the students as participants through interviews would have added many challenging factors to the research including consent and ethical considerations and the differences recognised by Arksey and Knight (1996:116) and Cohen *et al* (2011:207) between adult and child participants.

The fieldwork at the Ironbridge Gorge WHS took place prior to the redevelopment of the Museum of Iron (November 2016- April 2017), which is part of the IGMT Coalbrookdale Masterplan (IGMT 2017a). The £1.4m redevelopment does not only include the layout, but also the interpretation (interpretative media, themes and narratives and collections). Learning is at the heart of the redevelopment, as recognised in the strategic objectives, which include to "modernise our exhibits and explain our collections in ways that meet the different learning needs of our visitors", "improve our alignment to Primary (KS2) and Secondary (KS3/4) components of the National Curriculum" and "Link the individual monuments and museums on the Coalbrookdale site through a retelling of the history of iron" (IGMT 2017b). This redevelopment therefore makes the research observations from this research a historic snapshot, as the use and experience by the educational community will be significantly different in the redeveloped museum.

Finally given that Ironbridge Gorge WHS is the research case study site (and focused solely on Coalbrookdale), the results may not be 'generalizable' (Bell *et al* 1984:191), given the global variables in pedagogical approaches, presentation standards and personal cultural relativism. As discussed, the research parameters were very limited in terms of geographical area and educational age group. As Badran (2014:108) noted about her methodology for research into heritage education in Jordan, the sample was 'a theoretical sample', which aimed to reveal

a "diversity in responses rather than emphasizing accurate representation of the population".

At the core of the research methodology is the credibility, objectivity and validity of the data. As recognised by Flick (2006:10) the validity of the data is dependent on "the recognition and analysis of different perspectives, the researcher's reflections on their research as part of the process of knowledge production and the variety of approaches and methods". The qualitative research methods used resulted in the triangulation of the methodological strategies which provides "a confluence of evidence that breeds credibility" (Eisner 1991:110). Through the process of triangulation and an active reflexive evaluation of the methodological process (Mason 2002) including the acknowledgment of limiting factors, this chapter has confirmed the credibility of the research process.

4.11- Chapter Conclusions

This chapter has presented the methodological approach adopted to answer the research questions and discussed the methods of data collection, management and analysis. It has defended the use of a qualitative research strategy including the observation of formal educational visits and sampling strategy, post visit semi-structured interview and the analysis of data sets from the mixed methodology. This chapter has provided a reflective and critical outline of the research methodology which confirms the credibility of the research process and data. The following chapter, the first of two analysis chapters, presents the fieldwork datasets in relation to the Ironbridge Gorge WHS as a learning resource and within the onsite learning process framework.

Chapter Five: Analysis Chapter: The use of Ironbridge Gorge WHS as a learning resource

5.1- Introduction

The following two chapters draw upon the fieldwork within the Ironbridge Gorge WHS and research datasets to provide an overview of the key findings in relation to the research question: How are World Heritage Values communicated within the onsite learning process. This analysis, which is split between two chapters, provides the content for the discussion and conclusion chapter. The first chapter provides an analysis of the fieldwork datasets within the framework of the use of Ironbridge Gorge WHS as a learning resource and the associated onsite learning processes. Broad trends in terms of pedagogical style, pedagogical content and learning patterns within the Ironbridge Gorge WHS are discussed. The second chapter analyses the specific datasets related to the communication of World Heritage Values. The datasets analysed are those presented and discussed in the methodology chapter: field notes from the observation of educational visits, post-visit interviews with the lead teacher of the observed visits and interviews with IGMT staff. As discussed in the methodology chapter, the datasets were coded and triangulated through a mixed approach, allowing for the identification of common themes and illustrative qualitative data from the research participants.

5.2- World Heritage and visit motivation

From the post visit interviews, the primary reason for visiting the Ironbridge Gorge WHS was to visit the IGMT museums and heritage sites as resources to support curriculum work. The second most common response was for historical reasons, as for many they were repeat visitors, for example one school noted that

they "had always gone there" (Dataset 9). Practicalities including the location (distance from the school) and budget costs were other frequently noted reasons for visiting amongst the lead teachers. These responses from the lead teachers of the observed visits support Kisiel's findings (2005:940), as discussed in the literature review, surrounding the complex series of motivations behind educational visits. The fact that the museums were in, and the schools were visiting and often staying in a WHS, was not important. Access to museums and heritage attractions due to the close proximity and high density within the Ironbridge Gorge was a key motivation, especially amongst the residential based visitors, confirming the research of Woodham (2009:266). This USP is recognised by the head of lifelong learning at IGMT who confirmed that "each site has its own strength and focus" (Dataset 1), whilst one lead teacher commented that "each museum has something a little bit different to offer really" (Dataset 19). This diversity and variety is the outstanding educational value of IGMT, not of the WHS designation.

For all but one of the participant schools, the World Heritage Inscription was not a factor in the educational visit. Where World Heritage was noted as a primary motivation, this may have been an exception resulting from the Hawthorne effect and the agency of the lead teacher. When asked what was the motivation for visiting, the teacher responded…

"To experience the birthplace of the industrial revolution, to enjoy a famous world heritage site, to facilitate active research for our Ironbridge enterprise project and our individual research project" (Dataset 12).

Eleven out of the fourteen visiting schools were repeat visitors, with five groups having visited for the past 15 years or more and one visiting for over 20 years. Some of the teachers had even visited Ironbridge Gorge with school when they were children. This demonstrates how engrained the Ironbridge Gorge is as an educational resource. Repeat visits by formal educational groups to museums/heritage sites have been under-researched, likely because of such data rarely being recorded. Whilst this data has not been recorded by IGMT, from both personal communications with the learning staff, and as evident through the fieldwork, most educational visitors (both schools and teachers) are repeat visitors. This research provides an key insight into the nature of repeat educational visitors and confirms the importance of this group as a user of the Ironbridge Gorge WHS. Unfortunately, given the passage of time, we are unable to identify to what the extent the inscription was a factor for the original decision by schools to start visiting Ironbridge. The head of lifelong learning at IGMT suggested that the impact of the 1986 inscription was that "it got our name out there…which is probably why we get so many residential schools" (Dataset 1). However, responses from lead teachers who were repeat visitors undermines this belief, as one teacher noted that "historically I don't know why Ironbridge was chosen in the first place" and that "I think it was first chosen because in year five we look at the Victorians in history" (Dataset 9). The same teacher concluded "to be honest I don't think it [World Heritage Status] would have made that much difference" (Dataset 9). This result undermines UNESCO's rhetoric about the added value of inscription. Ultimately, the curriculum link was the most important visit motivation by the lead teachers.

5.3-The WHS as a cross curricular learning resource

Research on curriculum mapping the educational value of WHSs and of museums and heritage sites has predominantly been dominated by their association with the National Curriculum, specifically the history curriculum (Henson 2003, Corbishley 2004:69, Black 2012:113, McDonald 2013, Grünberg 2014). Unlike the previous research, the fieldwork provided a unique insight into their actual use and value, rather than their potential or theoretical links.

Within the Ironbridge Gorge WHS, the curriculum links are manifested through the permanent and temporary interpretative media and onsite learning programmes at the IGMT museums and heritage sites (Appendix 2). The relationship between the formal education offer by IGMT and the national curriculum, as summarised by the head of learning, is clear…"the formal education offer is based on the curriculum…Schools don't have time and don't have money to spend going out for something that isn't… relevant to their studies" (Dataset 1). The curriculum links noted by the lead teachers relate to the visit motivation but also the learning activities during the visit and pre-and post-visit classroom learning.
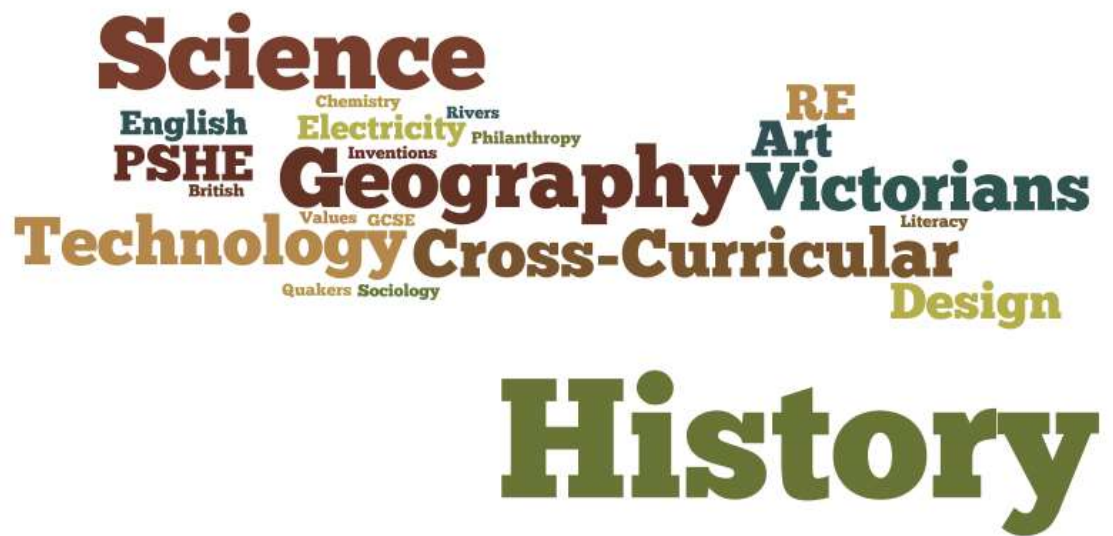
Figure 16: World cloud illustrating the curriculum links identified by lead teachers during the post visit interviews. Source: Author 2017.

Figure 16 is a Word Cloud which visualises the data from the post-visit interview question about the curriculum links. It confirms the cross-curricular value of Ironbridge Gorge WHS and that as expected the History curriculum was the primary curriculum link. However, STEAM (Science, Technology, Engineering, Arts and Mathematics) were also key curriculum links and were the curriculum areas most developed through onsite learning activities. This is confirmed by the analysis of 55 booking forms for formal educational visits to IGMT museums in 2016 (Graph 1), whilst nearly a quarter did not state their reason for visiting the Victorians and the Industrial Revolution did form the focus for majority of the educational visits. World Heritage was not noted as being a focus for any of the school visits.

Focus of visit (2016 Booking Forms)

- Victorian
- N/A
- Other
- Blists Hill
- Industrial Revolution
- Science
- History
- Residential
- GCSE Coursework

Victorians 36%
N/A 24%
Other 7%
Blists Hill 9%
Industrial Revolution 11%
Science 5%
History 2%
Residential 2%
GCSE Coursework 4%
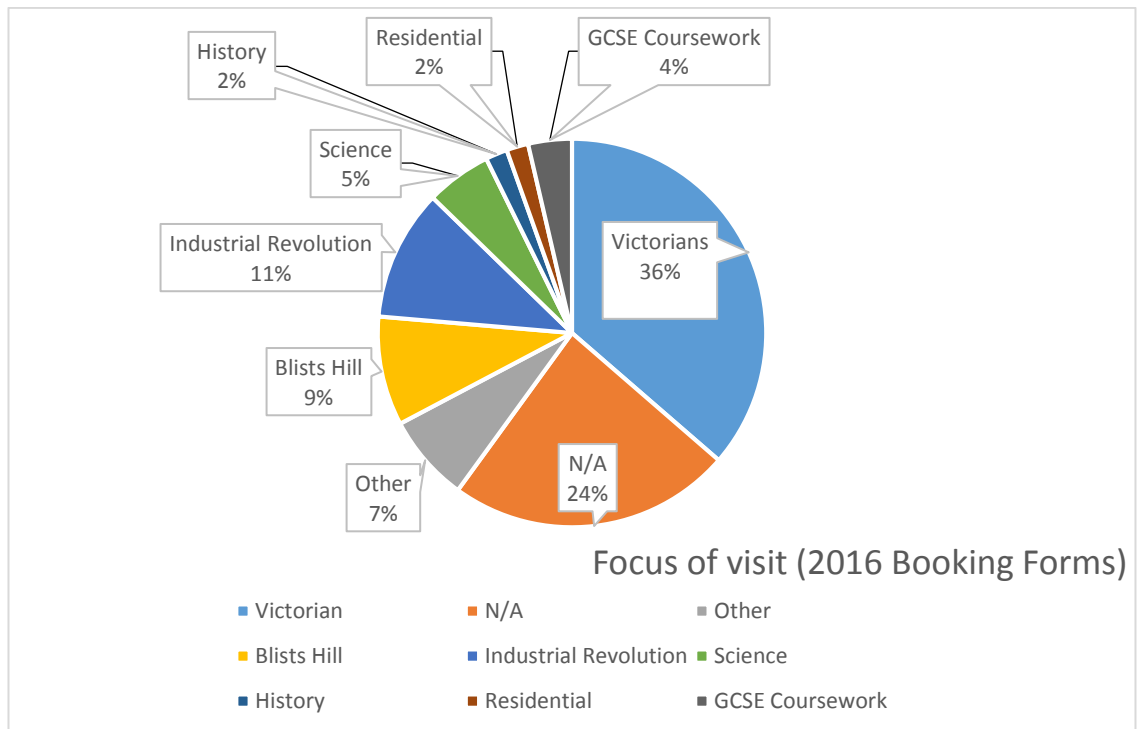
Graph 1: Pie chart showing the reason for visiting IGMT museums taken from 2016 IGMT School Visit Booking Forms. Source: Author 2017.

The cross-curricular value of the Ironbridge Gorge WHS was therefore evident in the activities and links developed through the visits. Though a cross-curricular approach is evident, this is wholly dependent on the lead teacher's agency and creativity in identifying and developing the broader links for example Geography, English, PSHE and Sociology. The benefits of cross curricular learning were clear for example, during one observation at Enginuity one teacher noted how one student who "isn't strong at maths in the class" was focussed on a maths based puzzle at the manufacturing desk (Dataset 30).

An example of how teachers view educational visits to Ironbridge Gorge as being cross curricular rather than pigeon holed into one curriculum subject, is the

response by one lead teacher when asked what curriculum areas were addressed during the visit…

"Topic- Inventions

Science – Electricity

English – Use of adjectives

History – Impact of industry

RE (SMSC) [Religious Education-spiritual, moral, social and cultural development] – Discusses Quakers, respecting others beliefs

PSHE [Personal, social, health and economic education] – Lifestyle leisure time and links with health"

(Dataset 8)

This research confirms the findings of Woodham (2009:253), who suggested that "far-reaching museums" such as IGMT are successful as they "cover a range of different subject matters, from industrial history to archaeology and art".

Art was a curriculum area that was strongly developed through IGMT learning activities for example tile decoration at Jackfield, clay faces workshop at Coalport and sketching at the Iron Bridge. This was recognised by the lead teachers, for example one commented that "It is definitely cross-curricular…They did an awful lot of artwork while they were there" (Dataset 19). As recognised by a member of staff from Enginuity, "Design and Technology, science, little bit of maths and engineering. I think quite a bit of art and design really" (Dataset 3). This is

evidence of Kisiel's (2005:950) "Curriculum-related experience connection" relationship between the fieldtrip and the curriculum.

This evidence from the observed educational visits to the Ironbridge Gorge WHS, supports the 'Learning from World Heritage' element of the conceptual framework for understanding the educational role of WHSs, as introduced in chapter 2, as it demonstrates how creative responses to the WHS are important pedagogical approach. It also supports the findings of Grünberg (2014:73) who argues that "Creativity is crucial for the dealing with the canon of World Heritage sites. Since a creative dealing with heritage is a necessity for its re-contextualisation and reception in the present", as it enables students "to find their own personal approach to, opinion on and consequentially way of dealing with World Heritage".

A member of staff from IGMT and a former primary school teacher who brought students on trips to the site over the years provided the clearest summary of the educational value and curricular links of the site. The member of staff noted that Ironbridge Gorge WHS is "a fantastic opportunity for teachers to bring their pupils for whatever is on the national curriculum they want to cover. Whether it's design and technology in Enginuity, whether it's local history or the Victorians…. It's very much what the teachers and the pupils want to get out of it really" (Dataset 5). It is however ultimately the agency of the lead teacher in relation to the school and national curriculum which defines the curricular links, visit motivations and intended learning outcomes.

Despite the cross-curricula value of the WHS, in terms of World Heritage for the majority it was not a priority because it was not the curricula focus. As discussed

in the context chapter, World Heritage is not explicit in the national curriculum, it is not a distinct 'issue- based education' and therefore not a required intended learning outcome. This relationship between the curriculum and the learning aims and outcomes explains the near absence of evidence for the communication of World Heritage within the datasets. For example, the lead teacher of a secondary school visit noted that "it is not really our focus" (Dataset 11), whilst another said that it "is not crucial to the nature of our visit" (Dataset 10). One member of staff concluded that "it depends on what the focus of the visit" (Dataset 3).

IGMT's head of lifelong learning proposes that, "schools don't have the time or the money for world heritage. They will say is that history or PSHE or English? Where does that fit into the curriculum?...Calling a world heritage workshop isn't going to get them in" (Dataset 1). This indicates the concern about the understanding of World Heritage in relation to curriculum requirements and for educational providers in terms of supply and demand. This is important as to date there has been a presupposition that given the importance of World Heritage Education (communicating the site's global significance, the UNESCO World Heritage programme and the human values of peace and cultural tolerance), if resources and learning activities were developed, schools would embed it within their site visits and classroom learning. The evidence from the Ironbridge Gorge is that this is not the case and that there is a lot more selection, prioritisation and mediation going on. As a result, given the low prioritisation for communicating World Heritage, as a distinct theme, this is not happening during site visits to the Ironbridge Gorge WHS.

5.4-STEAM focussed learning and Industrial World Heritage

As discussed in the context chapter, the Ironbridge Gorge WHS is an industrial WHS and is inscribed through criteria ii and iv of the UNESCO World Heritage Convention (UNESCO 2016a). Criteria ii is based upon "developments in architecture or technology, monumental arts, town-planning or landscape design" whilst criteria iv relates to "an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history" (UNESCO 2005:19). Given this, it would be expected that any onsite learning programme draws upon the outstanding World Heritage Values which link to the curriculum areas of science, design, technology and engineering.

The fieldwork confirms that Science, Design, and Technology based learning activities were developed primarily through the onsite learning offer at Enginuity. As noted by one presenter, they are "proper lessons" (Dataset 29). The educational workshops include making and racing buggies and boats, making jitterbugs and interactive shows and presentations such as materials and structures and robots. All workshops are design, technology and science focussed and linked to the curriculum at primary and secondary levels. The learning programme delivers a Science, Technology, Engineering, Art and Mathematics (STEAM) based learning through a creative process which is also competitive and develops teambuilding values.

IGMT's aim as an educational trust is "to be a world leading museum of industrial heritage; to operate with entrepreneurial flair and creativity in order to inspire and engage people in the world changing story of the Ironbridge Gorge World

Heritage Site" (IGMT 2017c). The qualitative research into educational visitors to the WHS has revealed that the human values of entrepreneurship and creativity drawn from the site's history are being fostered through IGMT's STEAM focussed learning offer within the WHS. The extent to which they are engaging educational visitors in "the world changing story" of the WHS will be discussed in greater detail later.

Unlike traditional museum settings, the reuse of industrial buildings provides a flexible learning environment which is big enough for large educational groups and joint productive activities which contrast to the strict classroom based learning, as there is greater freedom of movement and noise levels. For example, as noted during the buggy workshops in Enginuity, where students were encouraged to applaud during the buggy races and told "you can make as much noise as you want. No one else is here" (Dataset 26).
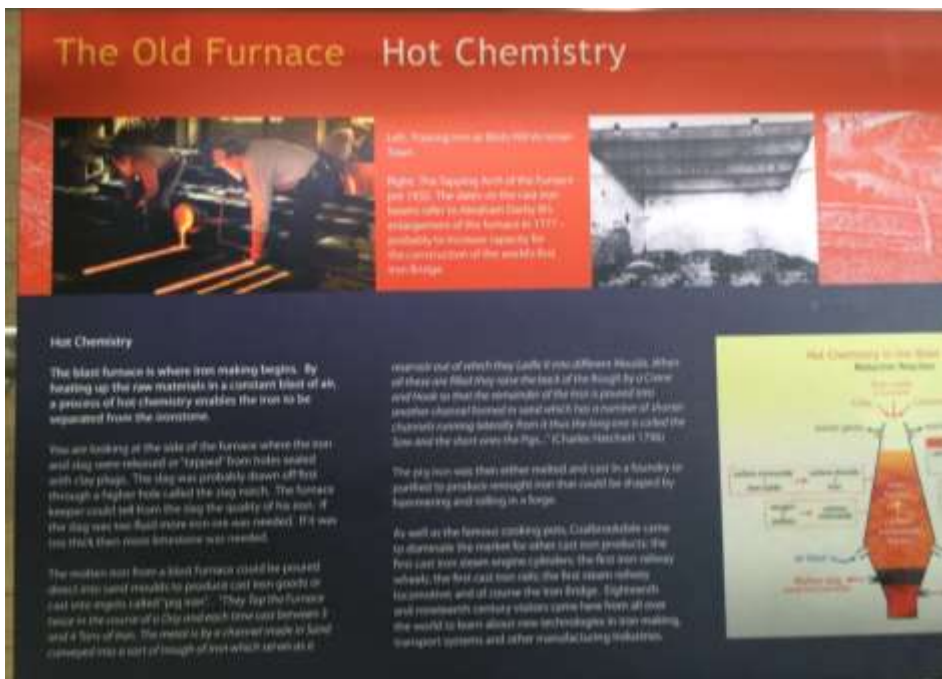
Figure 17: Photographs of an interpretation panel at the Old Furnace. Source: Author. 2016.

The Old Furnace provided the opportunity to investigate what extent the heritage assets were being used to support curriculum learning and to gauge to what extent the World Heritage Values were being communicated. Most lead teachers observed did explain the process of iron production in the furnace, using the interpretation panels located around the furnace. A few lead teachers used the hot chemistry interpretation panel (Figure 17) as a focus given its direct link to the chemistry curriculum. During one visit, a chemistry teacher on the trip used the interpretation panel to remind the students of the curriculum work they had studied in Year 8 (Dataset 25). This is evidence of Kisiel's (2005:950) "Point-by-point connections" relationship between the fieldtrip and the curriculum.

5.5-Curriculum links and the Victorian dominance

As expected, History, specifically the Victorian period curriculum theme was the primary curriculum link, as illustrated in Figure 16. This supports 2012 research by IGMT which identified that most of their educational visitors were in KS1 or 2, and 89% were studying the Victorians, and the Industrial Revolution units of the National Curriculum (AIM 2013). This is the period in the UK from 1837-1901, during the reign of Queen Victoria, a time of rapid industrialisation and development. The prioritisation of the Victorian narrative as evidenced from the fieldwork supports the discussion in the context chapter and the analysis of the booking data. The head of learning for IGMT proposes that the prioritisation of the Victorians is because "it is very cross curricular" (Dataset 1). It is popular given its closeness to the present day (Clive and Geddie 1998:14).

For many participants, the visit brought the taught history curriculum to life (Datasets 2 and 21). The educational visits support classroom based learning as confirmed during the post-visit lead teacher interviews, with comments including that "it links obviously with our Victorian topic which we have studied in year 6" (Dataset 16), "the children had studied Victorians in year 5. So, it was a good way to consolidate their previous learning" (Dataset 7), and as communicated to the students during one observed visit, "remember you studied this last year in year 5" (Dataset 19). This is evidence of Kisiel' (2005:950) "curriculum unit review" relationship between the fieldtrip and the curriculum.

The narrative dominance of the Victorian period is comparable with other WHSs. At the Frontiers of the Roman Empire WHS, during recent teacher consultation about the Antonine Wall, it was identified that "the enthusiasm for Romans as a primary school topic predates the new status of The Antonine Wall" (JWF/Scotinform 2012:4). Whilst at Saltaire WHS, consultation with teachers once again revealed that "many teachers have not heard about or are unclear about the history of or what is on offer" and "use the site for one particular aspect of the curriculum and have done so for some time e.g. the Victorians. These teachers were not aware of the unique potential of the site as a Citizenship and Enterprise resource" (Cremin and Hackett 2009:9). Shifting long held expectations and raising awareness of the diversity of narratives and therefore learning opportunities is a challenge for all WHSs. Given the evidence for STEAM orientated learning across the Ironbridge Gorge WHS, whilst the curriculum focus for the visit is primarily supporting the Victorian theme in the History curriculum, IGMT has been successful in diversifying the onsite learning experience.

However it could be argued that this dominance of learning about general life in the Victorian Period and the Industrial Revolution in the UK is an example of where a national framing of the heritage is done at the expense of fostering a more global understanding. For example, as observed at the Darby Houses, where during an interview with one front of house assistants they commented that "I tend to ask, what is on the curriculum, what they want to know about and ask the teachers if they would like an overview, because not everybody does. If they want to know about Victorian houses, I tend to dwell on that. If it's about the family history, I tend to dwell on that" (Dataset 2). On one visit, the lead teacher asked the front of house assistant to expand on points of interests in relation to the focus of their visit. The lead teacher from a secondary school visiting as part of a GCSE Controlled Assessment, was asked by the front of house assistant in Rosehill house what was the focus of their visit was upon entering, the lead teacher responded "How the Darby family treated their workers. If you could say something about the workers/servants and compare this to the houses of other industrialists. If you could also say something about the Quaker burial ground" (Dataset 24). As addressed in the post-visit interview, the teacher noted "in Rosehill and Dale house we ask the staff to talk the kids about the Darbys, Quakers and how they treated their servants within the house, because that is obviously relevant to our work" (Dataset 11). This is a good example of how the learning experience can be tailored to the learning aims; however, this is dependent on the agency of the lead teacher and the organisational staff.

It is worth noting that the current 'national curriculum' revisions for English schools are having different effects with regards to educational visits to the Ironbridge Gorge WHS. As recognised by the head of lifelong learning, despite the

initial fear (AIM 2013) and the slight evidence of a "knock" in educational visitors in 2015-16 (Dataset 1), for primary schools the Victorians remain the principal curriculum link and visit motivation as it is continued through a local history study. The frequent response by primary school teachers during the research was, "as far as I'm aware we are keeping it" (Dataset 14). This supports the findings from the review into formal learning in museums which identified that "although many museums noticed an immediate drop in business, they largely report that school visits are picking up again. Familiar activities have often been re-badged as "literacy" or "local studies" and museums have been exceptionally fleet-of-foot in spotting new opportunities" (Arts Council England 2016:26). For secondary schools, it does appear that curriculum change, especially for GCSE's (notably the Schools History Project- History Around Us specification) are going to lead to a decrease in visits to the Ironbridge Gorge WHS. As recognised by one secondary school teacher, "sadly, due to changes in the curriculum, we will not be returning on a visit with the same intent. However, the visit could be linked to other areas of the curriculum" (Dataset 10).

Within the context of World Heritage, this prioritisation of the broad Victorian period as a learning narrative undermines the World Heritage OUV. As recognised by the head of lifelong learning, "the nice thing about a local study about the Victorians is that everybody's got some local Victorian thing" (Datasets 1). The ubiquity of Victorian heritage and competing Victorian heritage attractions (a few observed schools also visited nearby Black Country Living Museum during their residential) thereby undermines the uniqueness of Ironbridge Gorge as a learning resource if visited purely to learn about the Victorian period. The uniqueness of educational visits to the Ironbridge Gorge as recognised by IGMT is that schools

can "see it as it was" (Dataset 1) at the reconstructed Blists Hill Victorian Town open air museum, however this does not match with the World Heritage Values i.e. the evidential remains of the industrial sites of global significance.

5.6-The disparity between the geography of site visits and the designation attributes

Criteria IV of SOUV for the Ironbridge Gorge WHS states that…

"Ironbridge Gorge provides a fascinating summary of the development of an industrial region in modern times. Mining centres, transformation industries, manufacturing plants, workers' quarters, and transport networks are sufficiently well preserved to make up a coherent ensemble whose educational potential is considerable".

(UNESCO 2016a)

The fact that the inscription criteria directly refers to the "educational potential" resulting from the WHS is significant. Unfortunately, the fieldwork undermines this, as it confirms that this potential is not being met, as formal educational visitors do not engage with the learning resource as "a coherent ensemble…which illustrates a significant stage in human history" (UNESCO 2016a).

Given the scale and diversity of the WHS, several variables determine the geography of the visit: time pressures, physical access, agency of lead teacher, curriculum linked learning outcomes and student interest and attention. These variables result in the conclusion that at present the geography of the visit does not correspond with the sites of significance inscribed through the WHS designation. Table 12 provides an insight into the motivations and intended

learning outcomes between the differences in the geography of educational visits to the Ironbridge Gorge WHS. The difference between the depth of responses supports the argument that the level of engagement with the heritage site to support cross curricular learning is dependent on the agency of the lead teacher. Dataset 16 shows a narrow focus of learning around the history curriculum at a limited number of IGMT sites, whilst dataset 8 demonstrates a more holistic and cross curricular approach engaging with a higher number of sites and curriculum topics including science, design and technology, health and English language. As illustrated by the dataset excerpts, the research confirms that at present educational visits consist of visiting many independent comparable IGMT museums and sites within the Ironbridge Gorge, rather than a holistic visit to a WHS landscape.

Table 12: Excerpts from Post-visit interviews by two lead teachers from observed educational visits	
Dataset 16	**Dataset 8**
As we do Victorians as a topic, obviously that is why we go to Blists Hill. We talk to them about the Industrial Revolution, so that's why the Coalbrookdale Museums are important. The Quaker houses because of Abraham Darby	We chose Enginuity because it linked directly in with of our topic of inventions and the science unit of electricity we were also studying, because of the zoned areas it was an opportunity for students to explore independently, but we also added a competitive element to increase focus by restricting time in each area and splitting the group into three teams they had a challenge to see who which team could complete the most activities well. I have already mentioned the historical relevance of the iron bridge and how that would lead on to design and make a bridge activity. The museum of the gorge obviously illustrated the significance of the gorge, and how it had changed overtime. Walking between the two sites also provided an opportunity to discuss health. Darby house was a chance for our students to experience what it would be like and I knew they would enjoy dressing up, but being able to experience the house, I then gave them the opportunity to think about how they could use adjectives/adjective phrases to describe different features. The chance for students to ask questions about unusual items like the face screen was brilliant because again linking into inventions we could discuss what we thought the objects purpose was.

Figures 18a-b: ArcGIS Maps showing Coalbrookdale within the Ironbridge Gorge WHS with proportional circles representing the number of observed school groups that visited each site/museum. Source: Author/ ArcGIS 2017.

As illustrated by Figures 18a-b and by the time allocation data, the most visited site by the observed educational groups was Enginuity- the national design and technology centre and science museum. Nine schools were observed at Enginuity. Inside the museum, groups followed two different learning experiences: Enginuity workshops/ interactive show or self-led visits. One interactive show, four workshops and four self-led visits were observed. Many of the observed visits began with upon arriving at the coach stop the teachers got the students into groups or pairs and then walked straight to Enginuity where the duration of the visit was spent, including the lunch break, before returning to the bus to depart. The interviews show that such visits diminish the educational value of the WHS, as the museum when solely visited and out of context, it is merely another science museum. For example, one observed primary school stopped off at Enginuity en-route to a residential elsewhere, purely using it as a "pit stop" (Dataset 20). The lead teacher commented that "we didn't look at [Ironbridge Gorge WHS] very much. Apart from going into the science museum" (Dataset 6). This contrasts with the how the head of learning at IGMT perceived school visits and the potential value of visits to the WHS, "we have got the objects that were made [here] … when they [educational visitors] walk into the car park they can just see the massive boilers" (Dataset 1). This is comparable with Blockley's (1999a:32) proposition that "children may engage with the replicated Victorian industrial environment manufactured at Blists Hill while ignoring the authentic environment they travelled through to reach the museum".

The second most visited site was the Darby Houses (Dale House and Rosehill House), with seven schools observed. The Darby Houses were the only location in Coalbrookdale where the learning experience was mediated by front of house

assistants. The presence of 'tour guides' was welcomed by the lead teachers, with one commenting that "the tour guides in the two Darby Houses were fantastic. That really did help again to set the context and bring it to life a little bit more" (Dataset 13), whilst another teacher noted that "they have got far more knowledge than we have…I think children, when they have someone else there talking to them, they tend to listen more than if it was just their teacher" (Dataset 16). For example, one teacher noted that "the volunteers at Darby House were wonderfully insightful and were able to answer all our students" questions (Dataset 8). The staff ensured that the group size was accommodatable given the limited space in the houses; groups were split between the two houses and visits rotated. This supports Roche and Quinn (2016) who confirm the benefits of tour guide-children interaction during visits to heritage sites. However, the experience of each group varied and was dependent on the agency of the lead teacher, the pedagogical style, content and communication of World Heritage Values at the Darby Houses was significantly variable.

The third most visited site was the Museum of Iron, where six schools were observed. The Museum of Iron contrast to Enginuity (science museum) as it is a traditional gallery structured museum with collections interpreted through interpretation panels and interactives. Hands on learning is replaced by formal didactic learning. Most lead teachers directed student attention to specific exhibits which related to their learning aims notably the waterwheel model and iron bridge model on the first floor and specific text panels. During one observation, a lead secondary school teacher was noted pointing out specific interpretation panels and saying that "they are important for the essay" (Dataset 23) whilst another lead teacher repeatedly directed student's attention to the

waterwheel model which was linked to the groups visit to the Old Furnace later in the day, by way of preparing the students and contextualising the visit (Dataset 25). However, given the free exploration of the galleries by the students, there were common areas of focus amongst the observed groups, most notably the mannequin's where photographs were taken and the touch table on the second floor.

Despite being a resource with a much greater ability to communicate World Heritage Values (given its collections and interpretative media), for both the students and teachers who preferred the hands-on learning and more enjoyable visit to Enginuity there was a limited level of engagement with the Museum of Iron. As evident by the time allocation data, many observed educational visitors had very short visits or avoided the museum altogether (Dataset 30), for example one lead teacher told the students "if we go through [Museum of Iron] as quickly as possible, then we can go back on the grass" (Dataset 26), whilst another said, "we will have a quick wiz around the museum [Museum of Iron] then the shop…last chance for retail therapy" (Dataset 27). In several observed visits, nearly the same amount of time was spent in the gift shop than exploring the museum galleries. Furthermore, a lead teacher from another observed visit chose to stay in Enginuity for the whole afternoon rather than visiting the Museum of Iron because based on previous visits, the children were "just were not interested. There is not that much there for them to see…You want the children to have a good time and enjoy themselves. There is only so much learning they can take in, in a day" (Dataset 16). This reaffirms the conflicting agendas of learning v playing perceived by schools and museums. However this raises questions about if Enginuity is the best place for students to learn about the World Heritage Values

of the Ironbridge Gorge, especially given the recent redevelopment of the Museum of Iron. This finding is supported by a recent review of the IGMT museums for family visitors, which comments that children will "pull levers, squirt each other with water, decorate tiles, have their names printed on a Victorian printing press, and, with luck, pick up knowledge that might percolate into something known as the national curriculum?" (Campbell 2017).

The Old Furnace is one of the two primary monuments (along with the Iron Bridge) of the Ironbridge Gorge which were the basis for World Heritage inscription as outlined in the context chapter. However, the results from the observation and interviews demonstrate a disparity between the significance and the engagement with the site by educational visitors. Only five out of the fourteen educational groups visited the Old Furnace. Time pressure was the primary reason that most observed schools didn't visit the furnace. However, if the site is of OUV, should visiting groups not be making time to visit it? Educational groups did not visit the furnace because either they were unaware of its significance, because they knew it was not an engaging learning environment or because it was not relevant to the intended learning aims. For example, during one observed visit, one teacher told another "don't spend too much time at the Blast furnace, as it not as relevant" (Dataset 24), whilst another commented that "We just didn't have time for that" (Dataset 19). Even when some educational groups visited the Old furnace, the onsite learning process was passive with one lead teacher commenting that they "just walked through" (Dataset 26), whilst another noted that it was 'a bit dull' but that it "has to be done" (Dataset 28).

The relationship between interpretation and learning in relation to the Old Furnace was also raised during an interview with another member of staff, "I think you could make any of the sites interesting, up to a point...With a good guide or a good volunteer or well-prepared teacher, I think you can bring that to life. Essentially, it is like the pyramids, it is a pile of bricks. But it has got a story to tell" (Dataset 5). This comment is important as it recognises the OUV of the site, through the 'Network Effect' pedagogy as discussed in the literature review, but also that the values aren't being communicated due to an absence of effective active interpretative media. Many teachers were disappointed with the interpretation at the Old Furnace, with one commenting that it was "sterile" and proposing there should be greater audio visual interpretative media to "bring it to life" (Datasets 13 and 25), whilst another labelled it "pathetic" (Dataset 30). These comments echo those of Blockley (1999b:186) that the furnace for some was an "uninteresting damp pile of stones and brick under a large glass and steel pyramid".

For those who did visit the furnace there was varying pedagogical styles. Most of the observed schools simply took students into the furnace where they were free to explore, glancing at the interpretation panels, with most students climbing on top the furnace, going through it and walking around it. As recognised by one student "we just walked around in a huge circle" (Dataset 24). Students took photographs of inside the furnace, the interpretation panels and one group had a photograph on the steps to the top of it. However, in Dataset 28, one student is recorded as saying "This is so cool", during the first-hand experience of visiting the furnace- exploring the dark atmospheric tunnels of the ruin.

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The time allocation data from the observations show contrasting variations in the time spent inside the Old Furnace, ranging from 6 minutes to 31 minutes. The group that spent the most time in the Old Furnace was the only observed non-self-led visit. The visit was supported with a guide not from IGMT, but a guide from the residential centre where the group were staying. The Old furnace is not included within the IGMT onsite learning programme; therefore, all visits are self-led by the educational groups. As recognised by the head of lifelong learning, the educational experience "is totally passive…they go around, see what's there and make of it what they will" (Dataset 1).

The Iron Bridge is the most iconic and well-known site within the Ironbridge Gorge WHS, however whilst the Iron Bridge was not included within the research sample area, nine educational groups visited the Iron Bridge. The reasons given by the educational groups who did not visit the Iron Bridge included that there was not enough time in their schedule (day visits rather than residential) and that for one group the coach driver was "not very accommodating" (Dataset 8). The visits were often made en-route between IGMT museums or in the evenings during walks from the residential accommodation. Other lead teachers had scheduled their visit to begin their residential at the Iron Bridge and the Museum of the Gorge to set the context for the visit and the significance of the area. As recognised by one lead teacher, "We started off at the bridge. We obviously explained the history of the bridge and the relevance of why we were there. I thought that was quite a nice starting point to the whole trip" (Dataset 19).

Only three of the thirteen observed schools explored the holistic 'narrative environment' of Coalbrookdale within the Ironbridge Gorge WHS. These were all

secondary schools visiting as part of GCSE Controlled Assessment visits. IGMT have developed a resource pack to support secondary schools who use them as a case study for their GCSE History Controlled Assessment (IGMT 2016d). The structure of the visit was linked directly with the recommended visit structure provided by the IGMT in their resource and guidance pack (IGMT 2016b-d). This is evidence of Kisiels' (2005:950) 'Curriculum-related learning connection' relationship between the fieldtrip and the curriculum. Led by the lead teacher the observed groups visited all or some of: Tea Kettle row, the old school, Carpenters Row, the Grove Inn, Church Row, Abraham Darby IV's grave at the parish church and the former Literary and Scientific Institute (now YHA Coalbrookdale) - as mapped in figure 18b. The educational value of the 'narrative environment' of the Ironbridge Gorge WHS is however undermined in the IGMT resources, as the guidance states that "remember that the residential part of Coalbrookdale is not part of the museum…you should not attempt to ask residents to help answer your questions" (IGMT 2016b:1). During the observation, there was evidence of engagement between the visiting educational groups and the local community (Dataset 23). This engagement contrasts with concerns raised by teachers evaluating the learning offer at Saltaire WHS who noted that "it was also important to protect the privacy of the residents and wondered how this could be achieved with groups of children sketching and taking photographs outside their homes" (Forrest 2010:31).

Whilst these visits engaged with the wider 'narrative environment' of the Ironbridge Gorge living WHS, there was greater prioritisation based upon the GCSE History coursework exam question, which in 2016 was "To what extent was the attitude of the Darby's to their workers at Coalbrookdale typical of employers

in the period c.1750-1900?". As summarised by one lead teacher, "the houses were important again this year, the Museum of Iron less so…. the blast furnace less important this year" (Dataset 11). Given the tighter learning outcomes, the World Heritage narrative and therefore the communication of World Heritage Values is less of a priority.

The Cover Image shows the green space in front of the Darby fountain and next to the fountain built for the 1851 Great Exhibition, this is a popular location for visiting educational groups to have their lunch break (pack lunches). For many of the teachers they recognised that the importance of educational visits was being outside, especially for those schools visiting from urban settings. For example, one teacher noted that "students would be happy sitting on the grass/ being outside all day" (Dataset 26) whilst another commented that it was "nice to have some quiet time in the natural environment" (Dataset 25). The popularity of this space is therefore a missed opportunity to communicate World Heritage Values. A glimpse of this was observed during one visit, where one group of male students went straight to the commemorative public art, leading to a Multiplier Effect whilst the teacher also noticed the commemorative plaques commemorating the 300th anniversary of the furnace along the plant border for the first time, despite being a repeat visitor. This new knowledge was then communicated by the lead teacher to the group when setting the context to the site, by saying, "see the plaques around the plant border. It commemorates 300 years since they smelted iron and made it stronger using coke" (Dataset 30).

5.7-Understanding the WHS as a narrative environment for learning

One of the most useful ways of understanding formal learning in informal learning environments and 'narrative environments' such as a WHSs and their museums and heritage sites, is in seeing them "as a tapestry of light and shadow" (Kirk 2014:151), as introduced in the literature review. By viewing the WHS through the spotlights metaphor (Kirk 2014:151), individual sites are salient and brightly lit such as Enginuity and the Darby Houses, whilst other such as the Old Furnace "languish in the shadows" to educational groups (based on Kirk 2014:151). This contrasts with the SOUV, where the significance of the Old Furnace indicates that it should be one of the most salient sites within the WHS.

5.8-Parallel learning experiences

Despite formal educational visitors being a "captive audience" (Ham 2013), with the students going from one site to another through a structured and time pressured visit, there are parallel learning experiences. Given the large size of visiting educational groups and the limited space at the heritage attractions, students were divided into manageable groups and go around led by teachers on a rotational basis. The research observations support the literature review and confirm Griffin (2012:16) that, "within museums much of the learning time is spent in friendship groups and involves spontaneous and incidental discussions with teacher and museum educator. The final learning however is individual, varying among and between students". Aside from parallel learning experiences resulting from individual and group learning, it was frequently observed when teachers spoke to individuals directly and when addressing the larger group but

not all the group could hear or were listening (Dataset 25), thereby impacting the onsite learning process.

Parallel learning experiences was most evident in the time allocation data from the observed visits. The most time spent in the Museum of Iron was 43minutes, whilst the least was 16minutes as the school group rushed through the galleries. One school asked students to write down facts in notebooks as they went around, this created a more structured learning experience as the school spent 13minutes in the lower gallery, which contrasts with only 3 minutes by another school. The variation in the time spent by groups visiting the Darby houses was striking with the longest being 52minutes and the shortest being 21minutes. The contrast between the time spent in the two houses was also obvious for example; one group spent 37 minutes in Rosehill House and just 9 minutes in neighbouring Dale House. This was reaffirmed in the comments of a member of staff from IGMT who worked at the Darby Houses, commenting that "they blitz their visit; they have no idea what they have seen really. It is just a house. An old house" (Dataset 4).

The time spent at the bridge varied from 20minutes to 50minutes, with some only driving past it. Given that the site is outdoors and without shelter in contrast to the Old Furnace, one teacher explained that they did not stay long as "It started raining. It had been a very cold morning", reaffirming the effect weather has in learning experiences. For visits by older students, the bridge was not the focus, as it became an opportunity to visit the shops in the town, with one group using it a lunch stop, with many students going to the fish and chip and pork pie shops (Dataset 24).

Recognising the realities of parallel learning experiences is importance as despite educational visitors having very structured and planned visits, individual learning will vary significantly and the variables of parallel learning experiences make communicating World Heritage Values even more difficult.

5.9-Onsite learning within the Ironbridge Gorge WHS

Across all sites there were common learning processes identified notably Novel Object Interaction, Joint Productive Activities, Hands on learning, Structured Play, Imaginative enquiry, analogies and use of 'entry hooks'. It is important to provide an overview of these to consider how World Heritage Values can be embedded within them through the learning resources of the Ironbridge Gorge WHS.

At all sites, but especially at Enginuity, students were observed "going quickly from one exhibit to another" (Dataset 20). This observed behaviour of rapidly moving from one exhibit to another and playing with the exhibits confirms Hutt's (1981) Novel Object Interaction theory.

Figure 19: Formal educational visitors 'playing' with the Power Valley water exhibit in Enginuity. Source: ████████████. 2016.

In the case of Enginuity, as discussed by Sutcliffe and Kim (2014:333), science-based museums differ from the traditional museum, as learning is based on hands on experience through interactive interpretation, Joint Productive activity (DeWitt and Osborne 2007:692). The majority of IGMT's onsite learning programme consists of Joint Productive Activities (Appendix 2), as defined by DeWitt and Osborne (2007:690), they are activities "which involves pupils working with each other and with the teacher towards an end product", such as brickmaking, tile decorating and buggy making.

Hands-on learning is the core principle of the IGMT learning approach (Dataset 1). This was confirmed by the head of lifelong learning who stated that "everything

we do is very much hands on, the children are involved. We don't really have anything where they come, sit in a classroom and get taught...We say, 'to experience is to understand'" (Dataset 1). This pedagogical style reaffirms the differences between classroom based learning and museum/heritage education, "we try and make sure that everything they do here they couldn't possibly do in the classroom" (Dataset 1). This supports Behrendt and Franklin (2014:236) who stated that educational visits "take students to locations that are unique and cannot be duplicated in the classroom". Hands-on learning was evident during the observations especially at Enginuity, with teachers telling the students **"**Touch all things. Remember it's a museum. Go explore" (Dataset 20). This pedagogical style is highly valued by the teachers, for example one teacher commented that it "encourages those children who aren't quite so academic to take part" (Dataset 7).

As recognised by a member of staff who noted that students enjoy "the hands-on stuff" as they "are active and participating the whole time. They enjoy anything that has a competitive edge" (Dataset 3). Competitive based engagement was observed in Enginuity with the interactive exhibits (Dataset 21), by teachers in the Darby Houses through object identification (Datasets 22 and 28), by the Enginuity presenter during a workshop on 'Machines and Robots' when the students were asked to go into the museum and label artefacts (Dataset 29), and by a front of house assistant at Rosehill House who challenged the students to identify a mistake in an embroidery (Dataset 28).

Figure 19 illustrates an example of Structured Play within Enginuity, however it also reflects the conflict between learning and playing observed across the WHS.

For example, in Rosehill house, there is a room on the ground floor which contains replica period clothing for visitors to dress up in. From the datasets, this was the most popular part of the Darby Houses and where groups spent the most time. Forrest (2010:30) notes the importance of role-play at WHSs, as it allows for "experiential learning and help to develop empathy". Forrest (2010:30) proposes that it is especially important in a living WHS, "surrounded by the trappings of the 21st century, particularly cars it was [sic] difficult to imagine the sounds, smells and experience the feelings from the time". However, this is not always open as it can become "a distraction for schools visiting and teachers have difficulties getting the children out of there" as noted by one front of house assistant (Dataset 25). The observations support Schauble *et al* (2002:439) who identified the "perceived conflict between playing (usually described as the children's agenda) and learning (presumably the museums [and teacher's] agenda)".

The learning approach inside the Darby houses was object based, understanding historical similarities and distance, through observations from period objects and their comparison with their modern-day counterparts, as recorded in Dataset 22. As recognised by an interview with one front of house assistant who noted that they would ask students, "What do you think is missing in here? Point to the ceiling and obviously, the lights" (Dataset 2). This learning approach made the experience relatable and more engaging, as the students engaged in a deductive process based upon asking questions to the teachers about the authenticity and function of objects. This pedagogical style is an important part of the difference between classroom-based learning and learning outside the classroom, as one teacher noted that it is "stresses the importance of students to ask questions themselves for the learning process" (Dataset 21).

During another observed visit, teachers were recorded exchanging pedagogical style advice, with the teacher from the group who had just been to the Darby houses telling the teacher of the group who was going to visit after lunch "we haven't been to the Museum of Iron. We got carried away in the Darby houses- the dressing up room was open. There are guides up there. And you can read the booklets in each of the rooms. I just picked it up, read it and directed the students to things" (Dataset 30).

The most common learning activity at the iron bridge, designed to make it a meaningful and engaging learning experience, was that of sketching (Figure 20). The activity foregrounds the aesthetic value of the bridge, above the other values. During consultation for a conservation report for the Iron Bridge, its educational value was recognised as being "immense with relevance to many aspects of the curriculum, including history, science and maths, economics (e.g. tourism), art and design, social history, engineering etc." (IGMT 2010a:25). However, further research is needed as it appears the current educational engagement is very much ephemeral and restricted in terms of curricular links.

Figure 20: Photograph of students sketching the Iron Bridge. Source: ▬▬▬▬ ▬▬▬ 2016.

The pedagogical approaches identified during the observation of educational visitors to the Ironbridge Gorge WHS reaffirms how students can be engaged with such heritage sites and foster the heritage values. Hands on learning through joint productive activities, object based learning with authentic and replica artefacts, experiential learning through site visits facilitated by teachers or guides help bring Ironbridge Gorge to life for the students and allow for meaningful learning experiences. As recognised by IGMT's head of learning, place based learning is so important, especially in Ironbridge because "having the actual things around them does sort of get the message across straight away" (Dataset 1). From the museum's point of view, the collections, buildings, archives should be at the heart of the onsite learning process, as "we have got a lot of resources we can pull on to help tell the story" (Dataset 1).

Although WHSs are inscribed for their authenticity and integrity, the changes within the historic environment and the intangibility of some inscribed heritage attributes (birthplace of industry etc.), make communicating World Heritage Values difficult. For example, during one observed visit, a guide told the students how the area "is full of trees, water and it quiet now but 200 years ago it was one of the biggest industrial places in Britain. It was noisy, smelly and smoky…It was not a pleasant place to be", commenting that "it is hard to imagine" (Dataset 28). Learning through imagination was identified as a common mechanism within the onsite learning process. For example, in the Dale House study, a member of staff commented that "You are standing in a little bit of history at the moment. This is the study where that sketch was created- the iron bridge was conceived" (Dataset 24). The member of staff pointed to one of the students who was sitting on a chair next to a desk, and said "That chair you are sitting in" (Dataset 24). The role of imagination to bring history alive was reaffirmed by an IGMT member of staff, "you can ask them to use their imagination. Especially in Dale House. You can say you can see him sitting at his desk, signing his paperwork off, with a candle light and that. Suddenly to me the world lights up. The little thing goes click in your head. Oh, I can actually imagine, people did live like this" (Dataset 2).

Common within many of the pedagogical approaches was comparative understanding which enabled an understanding of the historical values, as recognised by IGMT's head of learning, "we are always emphasising the differences between then and now" (Dataset 1). Furthermore, during the observations, analogies by teachers and IGMT staff were used to make the pedagogical content meaningful to the students. An example of where analogies

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were used to communicate the World Heritage Values include a comment by one teacher that Abraham Darby was "the Richard Branson of his day" (Dataset 25).

Heritage values were often humanised to make them meaningful. As recognised by one member of staff, the educational value of the Old Furnace can be brought to life when discussed within the context of the social history. "When you relate it to the fact that the family lived here and you can refer back to the fact that's where he had a business and people worked very long hours…that is was terribly hot", if not "it is just a ruin of old bricks, isn't it?" (Dataset 2). This supports Egan (1997:90) who discusses the importance of fantasy, heroes and heroic achievements, with these reasoning for their popularity in learning being that they are "human qualities of transcendent degree". Egan (1997:90) uses an example from teaching about the Industrial Revolution, through the common communication in relation to the individual figures of Isambard Kingdom Brunel or James Watt. This approach is evident at Ironbridge Gorge (Abraham Darby) and at other WHSs. The use of individuals makes the OUV relatable by way of "humanizing the content" (Egan 1997:259).

Finally, the literature review discussed, heritage is "nested" (Sodikoff 2012:26) and therefore engagement with heritage can be through an entry point/hook (Falk and Dierking 2000) by means of one of these levels. Most observed visits were engaged at the heritage of Ironbridge on a national level, few at a local level-none engaged with the heritage within an international or global context. This prioritisation supports the findings of Fordham and Hollinshead (2002:13) who identified that "teachers, overhwemingly, asked for materials on national and

local heritage, as it was felt that issues of world heritage could not be understood until those closer to home were investigated".

During one observed visit however, the 'entry point' and engagement was at the personal level. As recorded in Dataset 22, during a visit by a primary school from London, the group visited the IGMT archives in Coalbrookdale to see a diary from a relative of one of the visiting students. A few students commented that they were going to see 'Abigail's diary' (the name of the student not the author of the diary). This was not part of the onsite learning programme, and down to the agency of the led teacher and IGMT staff, who did not charge for this extra. Spalding (2012:124) recognises the use of personal narratives and accounts to facilitate learning. This example supports Stone (2014a:15) who argues that we should be striving to capture at "even the largest, most impressive, World Heritage Sites' attempts should be made to develop the 'personal past', as they provide 'the opportunity to discover such human stories". This contrast with Poria *et al* (2011:485) who proposes that WHSs "do not invoke feelings of personal attachment' due to 'the perception of a site as 'world heritage' ".

5.10-   The importance of Pre- and Post-visit learning activities

Table 13: Table summarising the pre-visit, onsite and post visit learning activities of the observed educational visitors.

Pre-Visit Learning Activities	Onsite worksheet based learning activities	Post Visit Learning Activities
- Introductory practical group assemblies - Curricular linked Classroom lesson: - Materials and Structures science lesson - Recapping Victorians history lesson - GCSE Controlled Assessment preparation - Homework: - Independent research project homework - Tile decoration design homework	- School designed own worksheet - Use IGMT's GCSE Controlled Assessment resource pack - Use Enginuity Challenge Worksheet - Use notebooks to record reflections	- Literacy based activities: - Recount of the trip - Explanatory writing - Persuasive pamphlets - Review of the trip with a focus on using adjectives to describe features of Darby House - Curricular linked Classroom lesson: - English lesson-Literacy - History lesson- Victorians, Industrial Revolution - Technology- Build a model bridge - GCSE Controlled Assessment worksheet discussion and essay preparation - D&T Enterprise project - Independent creative response assignment

Pre-visit activities are important to ensure that the pupils are familiar with the structure of the educational visit- what they are going to see and do and why (Kostarigka 2010:282). Pre-visit orientation is important as it reduces the "novelty effect" and enhances learning during the field trip (Falk and Dierking 2000:139). Eight of the fourteen observed schools undertook pre-visit learning activities-none of which were explicitly about World Heritage. The extent and depth of the activities varied (Table 13) due to the agency of the teacher, available time and learning aims and outcomes. One school however, a repeat visitor to IGMT, on a past visit had bought a copy of the context setting video which is on display in the Museum of the Gorge, and this was shown to prepare students for the visit. This is

important as the video includes a section on the World Heritage Inscription, discussing the significance of the site and relating it to other well-known WHSs. One of the schools that did not do any pre-visit activities explained that "it was not needed" (Dataset 17), as the trip was part of an annual enrichment week comprising of different non-curricula activities.

Worksheets as a pedagogical style have been widely critiqued (Scottish Museum Council 1987:110, Durbin 1989:279, DeWitt and Osborne 2007:688, Black 2012:113). 9 out of the 14 schools provided worksheets/work booklets for their pupils during the visits (Table 13)-none of which were about World Heritage. As observed, those who did have worksheets were more focussed than the groups of students without. For example, as recorded in Dataset 29, there was an obvious difference between the observed group in Enginuity with their worksheet who were reading the interpretation panels and the other visiting educational groups who were playing with the water.

Jamieson (1984:12) and Jackson (2000:213) however concluded that this results in students being "buried" in worksheets, and DeWitt and Osborne (2007:688) argue that it "often generates little more than the transfer of words directly from the label to the worksheet". Furthermore, the lack of interest by some students on the worksheets was obvious as worksheets were folded up, not completed or left behind (Dataset 24 and Dataset 26). The paradox of worksheets is recognised by Griffin (1998:300) who identified that the teachers observed "went to the effort, expense and anxiety of bringing their classes to a museum and said they brought their students to museums to see the real objects, yet they then gave them label-oriented worksheets to complete".

Post visit activities are essential to reinforce the learning experience, as Behrendt and Franklin (2014:242) stress, "back at the classroom, it is imperative that the teacher spend sufficient and quality time to reflect on the experiences and help students build connections to the curriculum concepts". 10 out of the 14 observed schools undertook post- visit learning activities (Table 13)-none of which were about World Heritage. This is evidence of Kisiels' (2005:950) 'Curriculum unit integration connection' relationship between the fieldtrip and the curriculum. The most impressive post visit learning activities observed were by a repeat visiting group who over the years have developed three activities which span pre, during and post visit, all of which drew from the school's engineering and design specialism and resources (D&T Association 2008). The main activity was a five-week Dragons Den entrepreneurship project. This innovative learning activity truly encapsulates the values of the Ironbridge Gorge WHS- ingenuity, innovation, design, creativity and the entrepreneurial spirit. Students were tasked with designing and creating a prototype of a product to sell in the IGMT gift shop. Past winning designs have included coasters, jewellery, photograph frames and a chocolate casting kit (Figure 21). The lead teacher, the school's head of design and technology, has built up a strong relationship with IGMT through the project and as a repeat educational visitor. As part of the residential, the group had a presentation by the IGMT marketing officer, which is bespoke to this school visit. This is a clear example of where the learning process was focused on knowledge and skills development based upon the values of the Ironbridge Gorge, but not framed as World Heritage education. The student's learnt about the attributes of the Ironbridge Gorge through the context of art and design, rather than learning about UNESCO's World Heritage Programme or it's goal. Through creative

responses to their visit and engagement with the site, it provided the students with opportunities for skills and personal development include those of creativity and entrepreneurism.

Figure 21: Chocolate Bridge Casting Kit. Source: D&T Association 2008:11.

The reasons for not undertaking follow up activities include time pressures and excluding students who did not go on the visit. For example, one teacher commented that "We have not been so good at the post visit stuff to be honest because the trip often falls at the end of our spring term or beginning of summer like it does now, so we have to move on to other things" (Dataset 9). In addition, the same teacher explained that all but three students from the year group came on the trip, in previous years it had been up to fifteen students, they noted "because of that we try not to talk about it…we don't dwell on it too much because of the ones who haven't been" (Dataset 9). One school noted that for students who had been unable to take part in the visit, for financial or personal

reasons, they undertake similar learning activities in the classroom and online research about Ironbridge.

5.11- Residential visits as mechanisms for a holistic engagement within the WHS

The majority (9 out of 14) of the educational groups to Ironbridge Gorge WHS were part of a residential visit. Most were a Monday to Friday visit (though some were a three-day visit), staying at one of the local residential centres or Youth Hostels within the WHS, and with itineraries based upon visits to the IGMT museums. Residential visits allow for longer visits and attract educational groups from a further distance away, supporting Woodham (2009). Residential visits are a common visit structure for visiting the Ironbridge Gorge WHS, enabling the educational groups to use them as a base and visit the numerous different IGMT museums and sites on different days, thereby spending a longer period at each one and thereby a more holistic understanding of the area.

Returning to the "educational potential" of Ironbridge Gorge WHS as a "coherent ensemble" (UNESCO World Heritage 2016), there was evidence from the field notes that where students had visited multiple sites, as part of a residential visit, connections were made between the sites. For example, during one observed visit (Dataset 30), in the dining room in Rosehill House, one student said, "It's got the blue and white china like at Coalport", referring to the visit to Coalport China Museum the day before. This reaffirms that residential based visits provide a deeper level of engagement across the WHS and greater opportunities for the communication of World Heritage Values.

Finally, despite the numerous residential providers within Ironbridge Gorge WHS and the surrounding area, given the popularity of the IGMT museums and peak visiting period (early summer term), fully booked residential centres are leading schools to reconsider their visits. For example, many of the observed schools had to divide their school group between two residential providers, with one group staying at the YHA Coalport and another half an hour away at the YHA Wilderhope. A limited residential offer is a barrier to further educational visits to the WHS.

5.12-   Onsite learning variables within the Ironbridge Gorge WHS

Whilst this chapter has provided an overview of the onsite learning processes observed within the Ironbridge Gorge WHS, as discussed there is evidence of parallel learning experiences and barriers to learning (limited engagement and attention).

During the observations of educational visits from across the Ironbridge Gorge WHS, the negative relationship between the learning process and Maslow's Hierarchy of Needs (Shaffer 2016:66) was reaffirmed. Maslow's Hierarchy of Needs is a theory from the discipline of psychology which has significant implications for understanding the learning process. By applying Maslow's Hierarchy of Needs to the observed educational visits, barriers to learning within the Ironbridge Gorge WHS can be identified. Examples include the summer heat inside the Old Furnace (Datasets 22 and 26), to rain (Dataset 11 and 16), to tiredness (Datasets 12, 21 and 24) and illness resulting from the week-long residential (Dataset 27), disappointment about broken interactives (Dataset 24), rushed visits due to time pressures (Dataset 2) and the excitement of fellow

classmates in the costume room in Rosehill House (Dataset 30). Each factor was a barrier in the onsite learning process. These variables are a result of learning taking place within an informal learning environment.

From the observations of the educational visits it became clear that all visitors engaged with the 'narrative environment' through unintended uses. From not following the visitor route and/or simply walking through the galleries (Datasets 12, 22 and 27), not reading the interpretation and not using the interpretation for the intended use (Datasets 21, 22, 26, 27, 29 and 33). This supports the argument that even if the onsite interpretative media did communicate the OUV within the framework of World Heritage, visitors do not necessarily engage with it.

Physical access was identified as a key variable also, as recognised during one observation where despite one of the student's using crutches to get around, they could access all areas within the Ironbridge WHS visit (Dataset 24). The lead teacher from the same school noted how in the past visit, a student in a wheelchair successfully visited all areas of focus (Dataset 24). Given the scale and geography of the Ironbridge Gorge WHS, there are ultimately access limitations which result in the site not being a universally accessible educational resource.

Finally, the agency of the lead teacher is a significant variable. This was most evident in the level of support and knowledge of repeat visitor lead teachers and support staff. As summed up by one lead teacher, "because the trip has been going for so long we are self-guided" (Dataset 16). For repeat visitors, from arrival, there was less guidance by IGMT staff, as commented by a member of staff "you've been before so you know what you're doing" (Dataset 26). The amount of contextual information provided by IGMT staff at each site depended on if they

were repeat visitors or not, however this resulted in failure to explicitly communicate the World Heritage Values. Furthermore, the time spent at each museum/point of interest was also influenced on if the teachers were repeat visitors or not, as commented by one member of IGMT staff, "if teachers are repeat visitors and are familiar with the museum, they are likely to rush through it to points of interest. If they have not been before they are more likely to spend more time- for example the Darby Houses" (Dataset 27). This was evident in the time allocation data from the fieldwork.

5.13- Chapter Conclusions

This chapter has identified the realities of the onsite learning process within an educational visit to the Ironbridge Gorge WHS. Most schools were residential based and repeat visitors which provide the most important added value to such visits. The onsite learning process recorded from the observed visits was hands on, experiential, social and cross-curricular. Learning took place within the pedagogical style and context of joint productive activities, cognitive mapping, novel interaction theory, structured play, use of analogies, personal connections and imaginative enquiry. The pedagogical content was related to the curriculum links primarily the Victorian period for the history curriculum and the theme of innovation for the science, design and technology curricula. Whilst these results may sound unremarkable, they are the first time that the pedagogical style and pedagogical content have been revealed for educational visits to a WHS. They indicate the absence of World Heritage as a distinct curriculum theme and visit motivation, and reveal that the pedagogical style conforms with that of heritage

and museum education, rather than there being a distinct World Heritage pedagogy.

In addition to the understanding that learning is constructivist and individual, the research recognised the variables in the onsite learning process including the agency of the lead teachers, relevance to the curriculum/intended learning outcomes, knowledge and confidence of the teachers, interests and attention of the students in relation to Maslow's Hierarchy of Needs (Shaffer 2016:66) and time pressure. It is as a result of these variables in the onsite learning process, that World Heritage is not explicity communicated during educational visits to the Ironbridge Gorge WHS.

The low number of educational visitors to the Old Furnace raises questions about to what extent the significance of the site is being communicated and made accessible to educational groups. If more students are visiting Enginuity as a 'science museum' over the nearby monument of global significance, does that mean that Ironbridge Gorge WHS is failing to communicate its Outstanding Universal Value?

Ultimately, World Heritage was not a priority for educational visitors and not a motivational factor or intended learning outcome. The following chapter will discuss in depth the fieldwork datasets in relation to the communication of World Heritage Values at Ironbridge Gorge WHS and consider to what extent the learning experience supported the pedagogy of World Heritage Education.

Chapter Six: Analysis Chapter: World Heritage Education

6.1- Introduction

The analysis of the fieldwork datasets from the Ironbridge Gorge WHS has identified that the World Heritage Status and Values is nearly invisible within the onsite learning experience. World Heritage is not part of the learning programme nor is the inscription communicated by IGMT staff. For the teachers, World Heritage is not a motivational factor in the educational visit, it is not a curriculum link and for many they were unaware of the status and did not make the links to the broader human values of the site. This analysis chapter discusses the evidence for the communication of World Heritage Values (Table 5) within the onsite learning process at Ironbridge Gorge WHS. It considers to what extent there is evidence of the implementation of a World Heritage pedagogy as considered in the literature review and also the extent to which the learning experience is different to museums and heritage sites which are not part of a WHS.

6.2-Communicating the UNESCO designation within the Ironbridge Gorge WHS

During most of the observed visits (11 out of 14), the World Heritage inscription was not mentioned by either the teachers or the IGMT staff (front of house assistants or presenters). This must be treated with caution as it based solely upon the researcher's observations, for example it may have been communicated on the bus, by teachers and or guides in non-observed groups or at other museums during a residential visit. In one post-visit interview a lead teacher did comment that they did introduce the site "on the coach before disembarking" (Dataset 17), explaining about the Old Furnace, however the extent to which World Heritage values were discussed was not mentioned.

The failure to communicate World Heritage was most evident at Enginuity, where most educational visitors visited. Upon arrival, all educational groups were given an introduction by one of the IGMT 'presenters'. The introduction averaging 10 minutes by the member of staff followed the same format covering health and safety information. The museum was introduced as the national science and design centre and no context was given about its location or relevance to Ironbridge Gorge WHS, let alone the World Heritage values. For example, as recorded in Dataset 21, the presenter noted only that "Enginuity is a National Design and Technology centre- so D and T. How things are made etc.". A number of teachers recognised this as a weakness, with one noting, "in the museum they gave the kids an overview of what it was. Ideally you would want a little bit more about heritage and all the rest of it" (Dataset 7). This contrasts with the comments of the head of lifelong learning who stated that in Enginuity the staff "say quite a bit about product development, the innovations that happened here, what went on and how it affected worldwide' and that 'It always comes back to us as a museum, the stories that we have got and the collections that we have got" (Dataset 1).

Throughout the fieldwork, many missed opportunities to communicate the World Heritage Values were recorded. For example, as observed during a workshop in Enginuity on Materials and Structures (Dataset 20)...

"IGMT Presenter: Does anyone know what the famous bridge round here is?

Quiet response (no pre-visit orientation?)

Student: London Bridge.

IGMT Presenter: No.

Student: Ironbridge.

IGMT Presenter: Yes. It is. It was made here in the furnace in the car park."

This was not expanded upon and more could have been said as to why the bridge was famous and why the furnace was significant. The situated presence of the exchange could have added a greater sense of personal relevance to the learning process.

6.3-Awareness amongst educational users

During the research, one question was dropped from the post-visit semi structured interviews, which was the question 'How would you define World Heritage Values'. For many participants, they were unaware of the site being a World Heritage Site and its significance, and struggled with defining 'World Heritage Values'. For example, one teacher commented, "to be honest, I don't know what their values are" (Dataset 6), whilst another responded, "I probably wouldn't have even known that it was [a WHS] and that is an awful thing to say" (Dataset 9).

A couple of teachers did understand the term World Heritage, for example, one teacher defined it as "unique sites, that aren't anywhere else. So, it has special values that they children should understand why it is so special" (Dataset 7). The same teacher noted that "I'm not sure that we don't draw on that enough" (Dataset 7).

During the post-visit interviews, only one lead teacher had a clear understanding of World Heritage Values and had embedded it within the onsite learning process. The added educational value that derives from such an understanding was

evident, as the secondary school teacher noted that…"We use the iron bridge to highlight the fact that really was Britain on the cusp of something big. It wasn't just locally important, locally significant, it was internationally significant. It attracted tourists at the time and still does today. So, we do talk about that and I did discuss that with them this morning. I think it is hard for them to realise just how much we take for granted. So, I am saying to them, it is important- look, it is a World Heritage Site. It was important at the time; it is significant today" (Dataset 11).

14 years on, Allen's (2003:110) proposition stands true that "despite the noble concept behind the World Heritage Convention, very few people appeared to know anything substantial about it". It is dependent of the agency of the lead teacher making the connection not only to the global significance of the site but also the human values which UNESCO hope are fostered during a site visit.

6.4- Communicating the concept of World Heritage through the 'Network Effect'

The Network Effect discussed in literature review chapter, as a means of an entry point/hook (Falk and Dierking 2000), was confirmed through the fieldwork as a common approach to communicate the concept of World Heritage and OUV. At an organisational level, IGMT use this approach as can be illustrated by a quote from their website:

"Discover more about the history of the Ironbridge Gorge and find out why, as a World Heritage Site, it ranks alongside the Pyramids and the Taj Mahal in its importance in world history"

(IGMT 2014).

This is also at the core of the IGMT Strategic Plan in which it states, "Our Vision is: To make the Industrial Age and Ironbridge's role in it, as well understood in terms of world significance as the Egyptian and Roman epochs... telling of the story of Ironbridge as the Birthplace of Industry" (IGMT 2010b:7).

During an interview with one teacher who initially appeared to be unfamiliar with World Heritage, they were able communicate the significance of the Iron Bridge in relation to the Wonders of the World, terming it "a mini world wonder" (Dataset 14). This reaffirms that the concept of World Heritage as Wonders of the World is better understood than relating it to the UNESCO World Heritage programme. This simplification of the technical and complex concept of OUV and World Heritage Vales is evidence of a solution to the communication of complexity.

Despite initially responding, "Sorry, I don't even know what that is" (Dataset 14) the teacher was aware of the universal significance, as they noted "I don't know if this is linked to it but I said to the children that the actual iron bridge itself is like a mini wonder of the world, because it is the first of its kind and how important it was" (Dataset 14). The teacher expanded on this pedagogical approach, noting that "We looked at other ones that they knew of. Because they were a lot more popular. Now when I have mentioned it again, wonders of the world, they are like, oh the iron bridge. It's like, yes brilliant" (Dataset 14). This along with comments by other participants reaffirms that an understanding of the WHS and World Heritage Values are linked to the iron bridge monument alone, and not the Old Furnace or wider industrial landscape which is in contrast with UNESCO's SOUV (UNESCO 2016a).

Other teachers reaffirmed an understanding of World Heritage Values through a comparative understanding, for example, one commented that 'the fact it was compared to the other wonders of the world stressed its significance and had an impact on the students' (Dataset 8). The importance of such an approach was recognised by one teacher who said that their students were unaware of the World Heritage status "because we didn't draw their attention to other world heritage sites that they probably wouldn't link with Ironbridge" (Dataset 11).

Notably one teacher referred to the introductory video in the Museum of the Gorge, which includes a short section using the comparative approach, as "It talks about the others like the Great Wall of China and the Rockies [not in the video] and that. They [the students] know that it's a site of special cultural significance" (Dataset 13).

This provides rare evidence that the World Heritage specific pedagogy discussed in the literature review is a reality and not just theoretical, and could perhaps provide opportunities for further embedding World Heritage Values into educational visits.

6.5-Understanding World Heritage Values: Ascribed Values

From the research it is clear therefore that educational visitors are unaware that Ironbridge Gorge is a WHS and that this is not being communicated to students during educational visits. In addition, evidence from onsite observation indicates that educational visitors are missing opportunities to frame the communicated history and heritage as valued in the framework of World Heritage and the OUV. However, it is not all negative, as despite the absence of the communication of

the World Heritage Status, the ascribed values were being communicated amongst educational visitors.

During most of the observed educational visits, students knew that the Iron Bridge was the focus of the visit and was a site of significance. In all visits the lead teacher explained the significance of the bridge- the first cast iron bridge in the world. Whilst this was not communicated in relation to the UNESCO designation, the global significance was communicated. The students knew the focus of the visit was to see the Iron Bridge, for example on a couple of observed visits, students misidentified the train viaduct in Coalbrookdale as the iron bridge, with comments including "I have found the iron bridge…it's a bit small" (Dataset 23) and "I can see the iron bridge…Is that the iron bridge? That's brick" (Dataset 26), whilst one lead teacher commented that during the trip, their students "kept saying on every bridge we crossed, is this the iron bridge?" (Dataset 16). Whilst at the Old Furnace, the significance was communicated less, one example is communication by the lead teacher, as one student asked "what's that big glass triangle? Lead teacher: It is a cover for the remains of the first blast furnace" (Dataset 24). There is a clear imbalance between the communication of the significance of the iron bridge and the old furnace. Perhaps this is due to the more complex significance and therefore detailed understanding of industrial processes needed for understanding the old furnace i.e. first furnace in the world where coke was used to smelt iron versus the iron bridge which was the first cast iron bridge in the world.

Out of all the observed learning environments in Ironbridge Gorge WHS, it was in the Darby houses where World Heritage Status was communicated the most. In the study in Dale house, on several occasions the front of house assistant told visiting groups about the construction of the Iron Bridge, as it was there where the bridge was designed. For example, as recorded in Dataset 24, the front of house assistant told the students that "it is the first iron bridge in the world, when all were made of stone and wood" and "that people came from all over to look at the wonder of the world. That is what it was at the time". It was the lead teacher however, that told the students about the WHS, as they said that "it was the symbol of the new industrial age and today it is recognised as a UNESCO World Heritage Site. It is recognised for its significance. Forget the Pyramids. We have the Iron Bridge" (Dataset 24). During another visit, the front of house assistant again in the Dale House study explained that the Iron Bridge, "is a special bridge. It was a wonder of the world like the Taj Mahal and the Grand Canyon. It was really special at the time. It still is now, as it is inscribed a WHS" (Dataset 26). This important observation provides rare evidence for the communication of World Heritage Values during educational visits.

During the only observation where a lead teacher did mention that the Old Furnace was a WHS, it was done whilst the students were walking to the site, and he only told the students nearest him about it, "it is actually a world heritage site" (Dataset 23). This example reaffirms the parallel learning experiences within the onsite learning process. When the teacher did direct the student's attention to the site, he said "See that pyramid/triangle shape building, that is the most significant part of the site, real historical significance, well maintained and

protected" (Dataset 23), however there was no discussion of the World Heritage Values with all the students.

IGMT's aim as an educational trust is "to be a world leading museum of industrial heritage; to operate with entrepreneurial flair and creativity in order to inspire and engage people in the world changing story of the Ironbridge Gorge World Heritage Site" (IGMT 2017c). From this research, it is not evident that educational visitors are fully engaged in "the world changing story" of the Ironbridge Gorge WHS. It is discussed primarily in relation to the contribution of the first cast iron bridge in the world, however not as the first place where coke was used to smelt iron and the implications that had for the industrial revolution. As discussed in the preceding chapter, the pedagogical content is focussed on generic narratives (Victorian Period, Industrial Revolution) and broad curriculum themes (History, Science, Design and Technology), at the expense of World Heritage Values such the international significance, global narrative and the outstanding ascribed values and attributes of the Ironbridge Gorge.

6.6-Understanding World Heritage Values: Human Values

Human values were not communicated during the educational visits and the link was not obvious to the lead teachers. As neatly summed up by the head of lifelong learning for IGMT, "those concepts are very difficult to put across...I'm not sure a three-legged pot is the harbinger of world peace" (Dataset 1).

When asked if it was important for the human values of the World Heritage inscription to be communicated during educational visits, the lead teachers were divided, with 8 out of 14 believing that it is important to communicate the human values of WHS. Most needed an elaboration on the definition of the term human

values. Once this had been defined, most teachers admitted they had never thought about it and that it was not relevant for the specific learning goals, for example one teacher commented "it didn't occur to me…I probably hadn't seen the link" (Dataset 9), whilst another responded "I suppose so. I wasn't aware of them myself" (Dataset 11). As summed up by one lead teacher, "trying to weave peace…it is not what springs to mind when talking about the industrial revolution and that area" (Dataset 16).

Understanding WHSs within UNESCO's narrative of human values, is a deep interpretation and one far beyond the functional narrative and ascribed values associated to sites by the educational community, as evident in the response of one teacher, "I very much doubt that the cohort of students will have considered the site at that level of depth. This is probably because they have been primed to focus on the factors pertinent to their field of study" (Dataset 10).

Once again there is a disparity between the onsite communication and understanding of human values in relation to WHSs and the institutional values of UNESCO and theory. For example, the research results about the use and understanding of World Heritage Values by educational visitors at Ironbridge Gorge WHS are in stark contrast with the relationship between WHSs and the UNESCO programme and human values promoted by UNESCO, as made clear in a 2016 speech by the UNESCO Director-General. Bokova (2016b:2) notes how the mandate is "to protect the heritage of humanity as a source of a sense of belonging, meaning, beauty, and creativity for all of us to share" and that "This heritage is indeed a wellspring of light and truth, essential to how we see the world, and understand ourselves and our place in it".

Some teachers recognised its potential considering the guidance for schools on promoting British values in schools in England (Department for Education 2014). Whilst it is positive to see the educational community identifying the human values of World Heritage, it is a nationalist understanding rather than the globalist interpretation promoted by UNESCO. A nationalist framing of World Heritage Education was also evident in the evaluation of the WHYH resource by Fordham and Hollinshead (2002:37) who identified that the section on World Heritage and Peace was of least interest to students and teachers and would be of greater interest if it was more "country specific".

This tension between national and global values can be further demonstrated by the results of a series of recent opinion polls which revealed that 47% of Britons felt that 'British Values should be favoured over multiculturalism' (Gatson and Hilhorst 2018:6). Furthermore, the evidence from a recent review of formal learning in UK museums supports this link, where teachers were unsure about how to integrate opportunities for such learning within museum visits (Arts Council England 2016:27). The report stated that "museums urgently need to grasp, since it plays to their strengths as places where ideas, histories and cultures collide and different points of view can be accommodated" (Arts Council England 2016:27), thereby undermining the uniqueness of WHSs as spaces for such learning.

Finally, there was an educational group from an all-girls school who were a repeat visitor (Dataset 25), as such the teachers had a deep understanding of the educational value of Ironbridge and had made links to the human values of the site based upon the Entrepreneurial spirit, Quakerism and Feminism (the

importance of Darby women). The lead teacher during the visit encouraged the other teachers to discuss these elements with the all-female students during the residential visit, given the potential of the Darby women "to inspire these girls" (Dataset 25). These human values have more of an opportunity to be explicitly promoted rather than those of cultural tolerance and peace, and should be considered in the future by the site management and visiting educators. This however was the exception rather than the norm, and a result of teacher agency.

6.7-Who should communicate World Heritage Values?

Lochrie (2016:1393) recognises that in the UK, "World Heritage has no formal status in terms of organisational administration and no additional financial assistance. Given World Heritage's lack of formal status, site management is typically reliant on the goodwill of various stakeholders coming together, regularly in an amorphous fashion". The fieldwork builds on this and raises questions about who and how should the inscription and the World Heritage narrative/values be communicated for educational visitors. Should it be by the site through onsite presentation and interpretative media, through specific learning activities and resources, by the IGMT staff and volunteers or by teachers before, during or after the trip?

- Communicating World Heritage Values through onsite education programmes

The lack of prioritisation of the World Heritage narrative identified during the fieldwork amongst the educational users is mirrored in the lack of priority given by the IGMT. The head of the lifelong learning for IGMT confirmed that World Heritage was the weakest narrative communicated to schools, "we don't do

anything about that specifically…it just hasn't caught on with schools" (Dataset 1).

This low priority by WHS educators and managers supports findings by McDonald

(2013:274-5). An understanding of World Heritage is not an Intended Learning

Outcome, with the head of lifelong learning noting that "it has not been in the

past" and that "it will be in the future" (Dataset 1). The head of lifelong learning

proposes that to communicate World Heritage values, it should be "almost like

sneaky" (Dataset 1), slipped into learning programmes and resources which meet

the priorities of the educational users. In the coming years a major

redevelopment is planned for the Museum of Iron and Enginuity (IGMT 2017c),

within which the World Heritage narrative is to be further embedded within a

more coherent story of the Ironbridge Gorge, including "the narrative and

chronological development of industry and the impact that we have had" (Dataset

1). Despite these intentions to better utilise the World Heritage brand and embed

the World Heritage Values within the learning programme, it could be argued that

this is too late, as this is only just happening over 30 years after the designation, a

generation of students have visited in the meantime.

-Communicating World Heritage through onsite Interpretative Media

The head of lifelong learning at IGMT believes that World Heritage Values should

be communicated through interpretative media at the museums across the site,

"it does not have to be in your face. But there should be something

everywhere…we are going to make sure that every museum site has something

that says how we fit into it being a World Heritage Site" (Dataset 1). As illustrated

in the context chapter, the World Heritage emblem and UNESCO brand is utilised

on operational signage and there is a plaque at the Iron bridge as well as a specific

exhibition on World Heritage, however it is clear from this research and Raine (Forthcoming) that the connections are not being made.

Teachers could not recall if the World Heritage inscription had been communicated to them onsite through interpretation and site presentation, for example one teacher commented that "the status of the site is not as apparent as it could be". This contrasts with the comments of one member of staff who noted that "the literature has that [World Heritage Status] emblazoned quite plainly on that as well" (Dataset 5). Some teachers however did recall observing information about the World Heritage inscription, on information boards through logos (Dataset 10), in the exhibition at Blists Hill (Datasets 7,12,16) and the video in the Museum of the Gorge (Datasets 8,12). As discussed in the context chapter, there is a gallery in Blists Hill with World Heritage Interpretation, however as observed (Dataset 21) and as noted by the head of lifelong learning, "people will walk straight past it and not notice it. So, we do need to be more prominent" (Dataset 1). Furthermore, one teacher argued that the "display board were quite adult" leading to only the "really bright ones" reading them (Dataset 7), therefore questioning the accessibility of the interpretation for children.

As discussed in the preceding chapter, the current interpretative media in the Old Furnace does not engage educational visitors, resulting in a failure to visit to key site of OUV within the Ironbridge Gorge WHS. During one observation, a lead teacher allowed students to spend longer in the dressing up room in Rosehill House rather than going to the Old Furnace, "because that was working" and as "it is a bit of a strain for the staff member to stand and bring to life the blast furnace" (Dataset 13).

Roth (2000:41) proposes that the sense of aura and presence of large working industrial objects or several together "produce a sense of the sublime". Furthermore Williams (2011:215) argues that "it is associated with scale – which is generally unimaginably vast, but which could also in this context represent extraordinary complexity; extreme feelings of shock or wonder and the workings of the imagination which can hardly encompass what may seem alien in comparison to our own human bodies and minds". Anderson *et al* (2002) support this through their research into the recollections of school children to museums, and the common recollection of large scale object/ exhibits and kinaesthetic experiences. Altogether it supports the understanding that industrial sites and monuments such as the Iron Bridge and the Old Furnace which are at the heart of the WHS's OUV must be at the heart of place based experiential learning. However, it is clear from the research that where there is World Heritage interpretative media it is not being engaged with and where it is absent it is in demand, for example the Old Furnace (Dataset 10). This therefore raises questions the impact of further interpretative media with explicit communication of World Heritage Values.

-Communicating World Heritage through museum staff and volunteers

During an interview with one member of IGMT staff, they commented that "wherever possible, we tell people: look this is a World Heritage Site" (Dataset 5). From the observations, whilst it is true that this member of staff did repeatedly note that Ironbridge was a WHS, most of the other staff did not. The reaffirms the agency in communicating World Heritage Values. As recognised by a front of house assistant at the Darby Houses, what is communicated, "tends to be about

the site itself, rather than the fact it belongs to a World Heritage Site" (Dataset 2).

The head of lifelong learning for IGMT recognised that "what it actually needs is for us as staff here in the museum to all feel that way. Because if we all feel what we have here was that important we would automatically say it" (Dataset 1). This is not the case now as evident from observations at the Darby Houses. For example, one front of house assistant told the visiting students that "there is just three rooms to see" (Dataset 30) another said, "there is not much to see here [Dale House], but there is a full house next door" (Dataset 25) and another told the student "this won't match Enginuity in terms of excitement. Relax, chill, enjoy the weather, and look at the lovely rooms" (Dataset 26). Such an attitude undersells the heritage site, results in a loss of interest and disengagement by the staff and students and is a missed opportunity to communicate World Heritage Values.

- Communicating World Heritage through the visiting teachers

For teachers, many felt that it was up to them to communicate the World Heritage status to their students. For example, one teacher commented that "maybe we as teachers should be a little more tuned into that [communicating WH status] as well. That is not just a museum thing. That is probably for us to look at as well" (Dataset 7). Another teacher felt it was their personal duty as a lead teacher to communicate it, as they noted that "I didn't put it across as well as I should have. I didn't put it across as well as I should have" (Dataset 12).

However, the identified reality was that the priority for the teachers was not identifying and communicating the World Heritage Values, but the safety of the students and communicating the specific curriculum-linked learning aims. As

evident by the comments of several of the lead teachers, for example, "I wouldn't even have known [if it was a WHS]. Eyes were all on the children" (Dataset 9), whilst another commented that "I don't think it really stuck out to me that message, but that might have just been because I was too busy focusing on where the kids were" (Dataset 9). This does raise the question even if States Parties, heritage sites and museums did explicitly communicate World Heritage Values through onsite interpretative media, given the nature of educational visits, would they ever be prioritised by the teachers?

Furthermore, as one member of staff interviewed rightly recognises, the extent to which the World Heritage narrative is to be communicated is dependent on the motivations for the visit… **"**It goes back to the reason behind your visit, with your chosen group of students really. It probably isn't going to be communicated that much to a bunch of 7-year olds who are here to build a teddy bear parachute, but if you have kids here doing GCSE coursework, I would say that would be at the forefront of it" (Dataset 5). However, as discussed in the literature review (Kisiel 2005) and as supported by the fieldwork interviews, given the complex series of motivations behind educational visits linked to the agency of the lead teachers, a one size fits all approach is unlikely to result a higher number of educational visitors and a greater depth of the engagement within the WHS.

The agency of the teacher is at the heart of communicating World Heritage Values. For example, during one observation (Dataset 26), a lead teacher had bought the IGMT guidebook about the Iron Bridge and was making notes during a workshop at Enguinity in advance of their visit later that afternoon. This reaffirms the agency of teachers in providing site specific pedagogical content.

Another example of the agency of the teacher in communicating World Heritage Values was reaffirmed as during a mug decoration workshop at Coalport China Museum. As noted in the field notes, the lead teacher asked if the IGMT member of staff could "give us some history on the area and what this place is before we go and do the mugs. So, it is not just a case of painting a mug, but they got an understanding of why they were there…It was her who said about the world heritage site and how important it was for industry" (Dataset 19).

The agency of the teacher results in not just the communication of values but also the depth of understanding as observed during the following observations….

"Lead teacher: See that building, it is the Museum of Iron. What is in there?

Students: Iron

Lead teacher: Why? Think about the depth of your answer

Student: The industrial revolution started here…They made lots of iron things… A man called Abraham "

(Dataset 30)

In addition, during another visit the lead teacher tasked students to write down their observations from the Museum of Iron to support post-visit classroom activities. The result was that students were more focussed than all other observed visits in the Museum of Iron. As summarised by the lead teacher, "You need to get your notebooks out and find 5 facts that interest you. Have a look and have a read. You need to remember that name: Abraham Darby. Who has already got one fact? When we go back to school you will need these facts for work we will be doing…Don't just copy words down. Think about what it means.

Write them down in your own words" (Dataset 33). This was the first group to spend time in the ground floor gallery and to read the gallery interpretation. This example reaffirms the centrality of the lead teacher in identifying values of significance.

However, such agency is dependent on the knowledge and confidence the teacher. As discussed in the preceding chapter there was a clear difference between repeat visitors/subject specialist teachers and supporting teachers. The knowledge depth of the teacher is therefore a key variable in communicating World Heritage values, as summed up by one teacher "if it is not your area of expertise, you can make a right pig's ear of it" (Dataset 13).

During one observed visit, a guide from the residential centre in which the group were staying led the Coalbrookdale visit. This was the only observed visit which was led by someone other than the teachers and the first group to go to the Old Furnace first upon arrival. This guide encouraged experiential learning then subsequently discussed the significance of the furnace, the conservation of the furnace (the only observed instance). Upon entering the furnace, the guide told the group "have a wonder around. You can go around it, on top of it, and through it…Have a look around, then we will discuss what it is" (Dataset 28). Out of all observed visits it was the guide who most directly addressed the significance of the site as he told the students "Imagine a world without cast iron or steel. The start of mass production and mass consumerism- just down there [the furnace]" (Dataset 24). This supports Savenije (2014:18) who proposes that educational visits allow for an embodied learning experience, which "may bring about new forms of historical understanding" through historical imagination "imagining what

it was like in the past", and is comparable with the DVMWHS resource (Cass and Rogers 2014).

The post-visit interview with the lead teacher confirmed the added benefit to the learning process at the site, as the guide compensated for a lack of confidence and knowledge by the lead teacher in interpreting and communicating the site values. The lead teacher commented that "it was really important because I would not have been able to give them that information at all. He knew so much, and I learnt so much as well. If he wasn't there, I wouldn't have been able to tell them. They came out knowing about so much, that I wouldn't have been able to tell them" (Dataset 14). The teacher indicated that the guide was successful as despite initial observation onsite that "they were really bored", in reality "they had retained everything. They knew exactly how to make coke, about iron ore and all sorts, which I wouldn't have known…They told us all about slag and loads of stuff. They came back and told all their parents about it. So, they have definitely retained all the information" (Dataset 14). This more active level of engagement was evident during this visit through the question and answer pedagogical style of the guide, for example "Guide asks 'what is it?'. Student: Is it where they used to make iron. Guide asks who did it? Student: Abraham Darby" (Dataset 28).

6.8-Factors in communicating World Heritage Values

During the observed visits, the information communicated by teachers and IGMT members of staff depended on intended learning outcomes and curriculum focus and resulted in the prioritisation of the Ironbridge Gorge WHS narratives. The pedagogical content ranged from a STEAM Enginuity specific visit to a Coalbrookdale wide visit focussed on the lives of the workers during the Industrial

revolution. However, it is clear from the research that the factors in communicating World Heritage Values are the focus of the visit, curriculum links, intended learning outcomes, age of the students (Dataset 17) and locality.

In the cases where schools were travelling long distances to visit Ironbridge, this was a factor in their perception of the value of World Heritage Status and the importance in communicating to the students. For example, one teacher commented that "I think if we were local, it would because we could take much more from the site" (Dataset 6). This raises an interesting point about a sense of ownership, as WHSs are inscribed for their OUV, which "is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity" (UNESCO 2015: para 49). However, if teachers do not appear to feel a sense of ownership and that the OUV does not transcend boundaries, there will be no agency to communicate World Heritage Values, thereby questioning the sites status and its apparent transcendental value.

From the research, age appears to be a variable in communicating World Heritage. For example, a primary school teacher commented that their students "I don't think they understand a lot about it, if I'm honest. I think for older children we would have looked at that in more depth. But for year 5 children, no not really" (Dataset 19).

Whilst the head of lifelong learning believed that all students should leave knowing that Ironbridge Gorge is a WHS, teachers were divided with 5 believing that their students did leave knowing that Ironbridge Gorge was a WHS, 4 believed that some left knowing and 5 that the students left not knowing. This is based upon post visit interviews with the lead teachers of the observed

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educational visits, not the students themselves. However most (10 out of 14) believed that it was important to communicate the World Heritage Status to the students. In reality, it was not a priority, as recognised by a number of teachers, for example "it was not one of our learning goals" (Dataset 8).

However, on several occasions it was apparent that despite information being communicated, individuals had been disengaged from the onsite learning process about the ascribed World Heritage Values….

"Student to teacher: what is pig iron? The one that looks like the pig? Where is the pig iron?

Teacher: Remember I showed you in the museum of iron".

(Dataset 25)

"Student: What's coke? Coke like this? (Has a Coke bottle)

Front of house assistant: I've explained that before".

(Dataset 26)

"Front of house assistant: Do you understand what Quakers are?

Students- nobody says anything, even though they'd been told in previous house".

(Dataset 26)

One of the barriers to learning, especially the ascribed values relating to industrial heritage, is the lack of knowledge and difficulty to make meaningful connections, as discussed in the context chapter. Most obviously, during an observed secondary school visit, two students noticed the recently closed power Ironbridge B Power Station…

"Student A: What's that? It looks like the thing in the Simpsons?

Student B: It's a power plant".

<div align="right">(Dataset 23)</div>

This example indicates that as current generations are growing up in a post-industrial society where there are no family members working in heavy industry and industrial sites have been demolished, they have no direct knowledge to make meaningful connections. The above observation is important as it is evidence of experiential knowledge being replaced with knowledge about industrial heritage sourced from popular culture and media.

In addition, during an observed visit to Jackfield Tile museum, the group visited the archaeological remains of the bottle kiln and pottery works, and two students were recorded as commenting….

"Student A: What's in there?

Student B: Just rocks."

<div align="right">(Dataset 27)</div>

Whilst during another observed visit, one student commented that the Iron Bridge is "just a bridge made of iron. Is there anything interesting?" (Dataset 26).

Despite these heritage sites being inscribed for having Outstanding Universal Value, it was evident that such universality is more theoretical than a reality. These examples, illustrates the challenge of communicating and understanding industrial heritage sites like the Ironbridge Gorge WHS and fostering positive

values, where significance is not recognised due to an absence of knowledge or interest.

6.9-Implicitly fostering World Heritage Values

This research has demonstrated a disparity between the policy, the theory and the practice concerning World Heritage Education. It has demonstrated that the World Heritage narrative is not prioritised and communicated by educational visitors to Ironbridge Gorge WHS. The ascribed values embedded by the UNESCO inscription are not explicitly being communicated, whilst the human values promoted by UNESCO are not being identified and developed.

-Ascribed Values

The research has identified the lack of awareness and understanding of the international significance of the Old Furnace in contrast to that of the iron bridge, UNESCO World Heritage programme and inscription, and the prioritisation of local and national significance over the global significance amongst educational visitors to the Ironbridge Gorge WHS. It is however, proposed that whilst ascribed values are not being directly communicated, in line with the literature review, it can be argued that such values are being fostered. Whilst the World Heritage Values are not being directly communicated, ascribed values of an understanding of Ironbridge as a place of significance are being developed. The evidence of educational visitors as repeat visitors, the use of Ironbridge and Coalbrookdale as a cross-curricular learning resource, and evidence that the students were aware of the iron bridge and the area's relationship with the Victorian period and industrial revolution, is evidence of the communication and development of ascribed values. Whilst such values may not directly correlate with those recognised by

UNESCO, the research indicates that the importance is that educational visitors positively value and develop ascribed values with the Ironbridge Gorge WHS. This supports Di Giovine (2009:4) who recognises that tourists "attest to being able to recognize the 'universal value' of these monuments even if they were unaware of UNESCO's ostensibly 'objective' and 'scientific' criteria or reasoning".

Whilst the research was not concerned with the retention of knowledge, the fieldwork indicates that students were learning and remembering key aspects/ascribed values including the importance of the iron bridge and Abraham Darby/Darby family and the relationship between Ironbridge Gorge and the industrial revolution. During most visits, students learnt about Abraham Darby, the iron production process and the realities of the industrial revolution. As evident in Dataset 26, when the residential guide asked the students who built the furnace, "Guide: It was built by Abraham…Students: Darwin…Darby" (Dataset 26).

-Human Values

Equally, with regards to human values, whilst it is evident that educational visitors do not appear make the connection between the ascribed heritage values and their deeper human values promoted by UNESCO including peace and cultural tolerance, such values are being fostered through educational visits. Teachers recognise the importance of learning outside the classroom and field trips as they allow for the personal and social development of students. As observed during the fieldwork, human values including teamwork and entrepreneurism were fostered and developed through the residential visit structure and the joint productive activities within IGMT's onsite learning programme.

Whilst the human values of World Heritage Values are not directly communicated or promoted, peace and cultural tolerance resulting from the global importance and shared heritage of humanity, human values are promoted during educational visits to Ironbridge Gorge WHS. Through learning activities developed by IGMT and the agency of the lead teachers, and as a result from the visit itself, human values of teamwork, creativity, entrepreneurial spirit and ingenuity and personal social development are fostered. For example, one member of staff from Enginuity responded to the question about the importance of communicating human values with, "all of our workshops have got a focus on teamwork and working well with other people" (Dataset 3).

The novelty of an out of classroom excursion, the nature of residential visits, being away from home and the personal and social development resulting from were common motivational factors by the teachers. This was especially true for year group visits rather than subject group trips, where the group sizes were much larger. For example, one teacher noted "a lot of PSHE goes on as well because the children are mixed up in their classes" (Dataset 7), another commented how the trip enabled teachers to see the students "in a new light" (Dataset 30), whilst another commented that the students "definitely grew as children" (Dataset 14). This evidence indicates the fostering of human values during such educational visits.

The research proposes that whilst visits to Ironbridge Gorge WHS fails to instil and develop World Heritage Values through a global approach, students do learn about the significance of the site (as summarised in Table 1) and human values are developed at a personal level. There is evident therefore that "the spirit of the

convention" (Holleland and Johansson 2017:9) was implicit but not embedded within the onsite learning process.

The conclusion that ascribed values and human values are developed by educational visitors to Ironbridge Gorge may therefore be because it is a visit to a heritage site, rather than because it is a WHS. This research suggests that there is no added value of the World Heritage inscription in practice for educational visitors, the same values could be fostered during an educational visit to any heritage site.

Rather than being a negative, this conclusion should be a positive. The evidence that educational visits to all heritage sites, not just WHSs, have the potential to develop both ascribed and human values supports the concept of the Virtuous Circle (Figure 22). The concept of the Virtuous Circle was developed by English Heritage (now Historic England) to focus their heritage conservation and outreach work, as it recognised that engagement with "the historic environment will act as a catalyst for the virtuous circle, ultimately promoting the sustainable future of the historic environment and its enjoyment by present and future communities" (English Heritage 2003:1). Essentially by engaging with heritage as an informal learning environment and resource, through both enjoyment and understanding, positive values are fostered which will develop a sense of care. This is known by the Derwent Valley Mills WHS educational team, as a "head, heart, hands approach" to learning (Greaves 2017 Pers. Comm.).

This is further supported by academic research, for example Aerila *et al* (2016:144) who noted that educational visits to heritage sites allows children to "make contact with the past, create their own worldviews, and see themselves as

part of a broader temporal continuum" as well as creating "alternative ways of looking at the world, promotes intercultural dialogue, and helps children learn from each other and understand diversity". The development of such an understanding and fostering of values through visits to museums and heritage sites generally is supported by a teacher survey by Hooper-Greenhill (2004:104) which revealed that 23% who said that pupils are very likely to have gained facts about themselves, their families or the wider world.

This understanding of engagement of heritage and fostering of values in its broadest sense, rather than through prescribed focus of World Heritage, does correlate with the aims of World Heritage Education, which include to "forge new attitudes and a life-long commitment to preserving our local, national and World Heritage for present and future generations" (UNESCO 2002b:7).
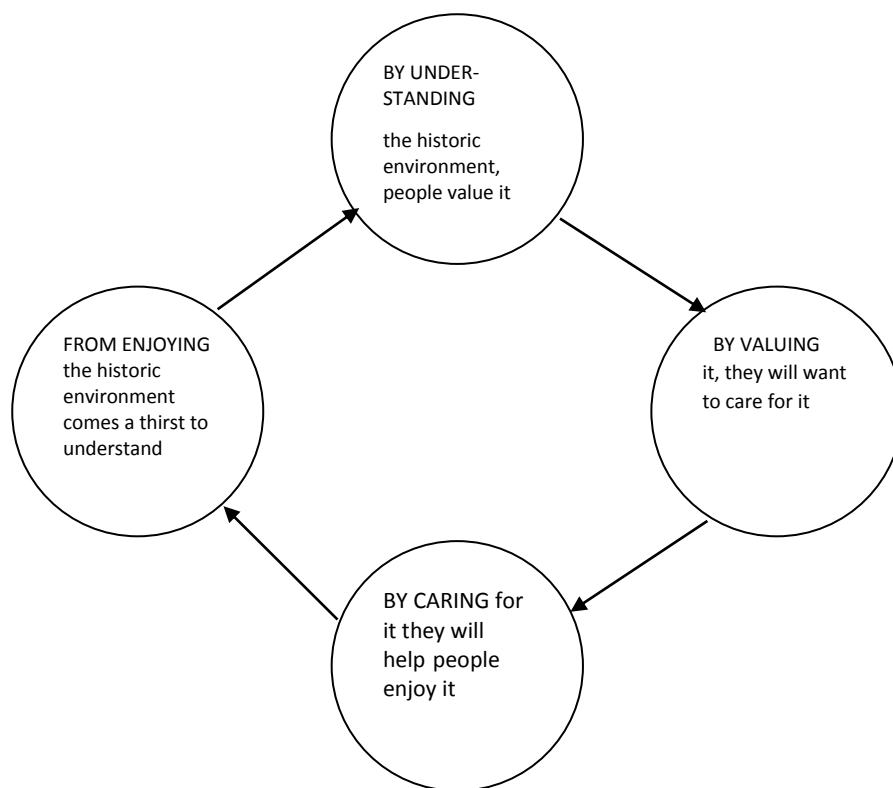
Figure 22: The Virtuous Circle. Source: English Heritage.2003.

At the heart of education at WHSs and of World Heritage Education are the following questions, what is more important and according to whom:

- That students leave knowing it is a WHS?

- That students leave knowing why it is a WHS?

- That students leave having fostered human values of peace and cultural tolerance because they recognise the value of the WHS within the shared common heritage of humanity?

- That students leave knowing that it is a place of significance? Personal, Local, National, Global significance?

- That students have a good, enjoyable and memorable experience and would return in the future?

These more indepth questions which have arisen from this research are beyond the scope of this thesis which was focussed on understanding does the communication take place and if so how. The fieldwork from the Ironbridge Gorge has provided an indication that at present there is insufficient awareness and prioritisation by World Heritage Site managers, educational providers and users to fully answer all these questions.

For this research, what depth of knowledge/learning is sought from a visit to the Ironbridge Gorge WHS? Is it that all visiting students know that they are visiting a WHS, that they know the ascribed values of the site in relation to the UNESCO Criteria or that they leave having fostered human values appreciating Ironbridge Gorge as a site of shared humanity? As summed up by one teacher during a post-visit interview, out of all of this, beyond all the jargon and technical knowledge,

the students should leave thinking "Oh wow, we have just been to a really special place" (Dataset 7). From the evidence of this study, in general this is happening at through site visits to the heritage sites and museums of the Ironbridge Gorge WHS. Furthermore, as a member of IGMT staff proposed, during visits, "Number one you want to give them a good day out and to enjoy themselves. Two, if they are a school group they are going to learn something. Whatever that is their target is for learning. But underpinning all of this, is the fact that they are at a UNESCO world heritage site" (Dataset 5). If all WHSs took this approach, they would be making a step in the right direction to achieving the aspirational goals of UNESCO's World Heritage programme.

6.10- Chapter Conclusions

In the analysis of my data, the prioritisation of World Heritage Values at the Ironbridge Gorge WHS has become apparent.

For the teachers, the curriculum links and the opportunities for safe, free choice, sociable learning in an informal environment is the priority not communicating the World Heritage narrative. The ascribed values are communicated onsite but not framed within the concept of World Heritage and UNESCO's World Heritage programme. Where World Heritage values are communicated it is down to the agency of the teacher.

For the students, they are captive audiences, given that visits are part of the onsite learning process, learning is bound to the agency of the teachers and the site learning programme, however there are opportunities to learn about World Heritage through the narrative environment. Experiential learning and learning outside the classroom, are important for the student, as supported by MingStones (2004:15) who identified that "for some children the mere fact of being at Hadrian's Wall [WHS] was a big enough learning experience".

For the site, the priority is in attracting educational visitors, thereby stressing the curriculum links and the value of learning in an informal learning environment. As a result, the site priorities the Victorian narrative and STEAM based learning, at the expense of World Heritage specific values. However, as this research has demonstrated the ascribed values relating to the Industrial significance and Victorian period are communicated, and the human values of teamwork, creativity and innovation are fostered through the Joint Productive Activities.

Where World Heritage values are communicated it is down to the agency of the volunteer/member of staff.

For UNESCO, the priority is communicating World Heritage Values-communicating the global narrative, and promoting the human values. From the evidence at Ironbridge Gorge, there is a clear disparity between the ideals of UNESCO and the realities of the site level learning experience. It found that World Heritage Education was not embedded into the onsite pedagogical style or content. Furthermore the findings indicate that the values being fostered are comparable with a visit to any heritage site/museum let and that there is very little evidence for the added value from World Heritage inscription to the onsite learning experience.

The following final chapter draws together the fieldwork analysis and the wider literature review research in relation to the research question: How are World Heritage Values communicated within the onsite learning process and sets the framework for the final conclusions and recommendations about if and how the Ironbridge Gorge can embed the World Heritage within educational visits.

Chapter Seven: Conclusions

7.1 Introduction

From the outset of this research, the 'on the ground' realities of the communication of the World Heritage Inscription and associated values have been sought. The research has illuminated the tensions and the ambiguity surrounding the communication of World Heritage values and its relationship with the educational users of WHSs. The preceding chapters have presented the findings from the case study site of the Ironbridge Gorge WHS and the onsite learning programme of the IGMT- the largest stakeholder of the WHS. The datasets were analysed within the frameworks drawn from the literature review, context and methodology chapters. These frameworks set the context for understanding the onsite learning process, the communication of values and World Heritage Education, to answer the research question 'How are World Heritage values communicated within the onsite learning process'.

This final chapter pulls the research together by way of conclusions to be discussed within the context of the three spatial scales of World Heritage Education. Firstly, the research question is answered considering the evidence from the fieldwork at the Ironbridge Gorge. Secondly the findings in relation to national context of World Heritage Education are discussed and finally the research conclusions are considered within a global framework i.e. the implications, opportunities and barriers for the other 1091 WHSs (as of 2018). These conclusions directly respond to research objectives as defined in the methodology chapter and are considered in relation to opportunities for future research.

The first research objective was 'to what extent are World Heritage values embedded in the onsite learning process?'. The literature review provided the theoretical framework and the methodology chapter provided the justification for the research methods chosen to answer this. It was important to define the specific terminology and concepts at the heart of this research. Following a process of desk-based research, World Heritage Values were defined as the collective term for values both ascribed (as established by the Statement of Outstanding Universal Value) and human Values (Peace and Cultural Tolerance due to the global significance and UNESCO's ideals). These definitions were chosen in recognition of the ambiguous and subjective understanding of the term Outstanding Universal Value which is at the heart of UNESCO's World Heritage programme. Whilst learning was recognised as being lifelong and defined within the constructivist school of thought, it was restricted to onsite learning- school visits and workshops at the case study site. The literature review also defined 'onsite learning process' in relation to specific learning theories and concepts drawn from museum studies which included Griffin's (1998:4) museum learning environment model, Kirk's (2014) concept of 'narrative environment' and Hutt's (1981) Novel Object Interaction theory. As discussed within the analysis chapter and to be reaffirmed further in this final chapter, the research from the Ironbridge Gorge WHS identified that World Heritage Values were not embedded within the onsite learning process, as the pedagogical content did not directly communicate these values or allow engagement with the associated attributes.

The second research objective was, 'to what extent does being a World Heritage Site inform the educational experience?'. The context chapter provided the framework for this as it gave an overview of the development of the

'heritagisation' of the Ironbridge Gorge during the latter half of the twenty century, with the conservation and interpretation of the post-industrial landscape culminating in the 1986 UNESCO World Heritage designation. It also provided a discussion of the development of the site as an educational resource, notably long before inscription and with long established and popular learning resources, programmes and approaches primarily from the Ironbridge Gorge Museum Trust. Based upon the fieldwork, the analysis chapter proposed that since becoming a WHS, little has changed in terms of the onsite educational experience, and where it has, it has been due to external factors such as curriculum requirements, lead teacher interests and opportunities and restrictions by the IGMT learning team.

The third research objective was 'how is the World Heritage concept processed by the visiting schools?'. Desk based research into the pedagogy of World Heritage Education and existing literature around learning at other WHSs allowed for a framework of principles, approaches and mechanisms relating to how the World Heritage Concept, UNESCO and World Heritage Values more broadly is communicated to be identified. This framework was then applied to the case study site through the analysis of the fieldwork datasets with a focus on the staff and volunteers of IGMT and the leader teachers of the observed visits. As discussed in the analysis chapter, there was evidence of these principles, approaches and mechanisms being used by site management through the onsite interpretative media, learning programmes and resources but also being communicated by some of the lead teachers. The research revealed a limited understanding of World Heritage Values, the concept of World Heritage and the UNESCO World Heritage programme amongst educational visitors. This low awareness by educational users and therefore limited direct communication

onsite is a key conclusion from the research and is discussed in greater detail in this final chapter.

Finally, the fourth research objective was 'what are the implications for World Heritage Sites and Education globally?'. Recommendations for site managers within the Ironbridge Gorge WHS as well as considerations for other WHSs and UNESCO are made based upon the research findings. Recommendations for further research are also suggested.

7.2-Acting Locally, Thinking Globally at the Ironbridge Gorge World Heritage Site

This research has for the first time provided an insight into the experience of educational group visits to a WHS and the museums and heritage sites within. Unlike previous research which has been theoretical, based upon policy analysis or curriculum mapping, this research was based upon onsite observations and interviews with the site management and users themselves. This research focussed solely on the onsite learning programme offered by IGMT and the onsite learning experience within the Ironbridge Gorge WHS. Although inscribed in 1986, this was the first research to consider to what extent the World Heritage inscription is communicated to visiting schools at IGMT's properties within the WHS.

7.2.1- World Heritage Education at the Ironbridge Gorge WHS

The World Heritage Education framework outlined in the literature review allows for a comprehensive summary of the research discussed in the analysis chapters and evidence of the extent to which World Heritage Values are embedded within the onsite learning programme at the Ironbridge Gorge WHS. This model has the

potential to be a useful management tool to evaluate the extent to which World Heritage values are communicated to educational visitors at other WHSs.

- 'Learning In'- With around 70,000 educational visitors each year, the Ironbridge Gorge is a long standing and widely recognised learning resource. This is further demonstrated by the large number of repeat visitors, domestic and international educational visitors and the well-developed educational infrastructure at the site which includes residential providers and IGMT's learning programme and resources.

- 'Learning About'- The Victorians (History curriculum) and STEAM based learning are the primary focus of educational visits to the Ironbridge Gorge WHS. The significance of the site in relation to the Victorian period and the Industrial Revolution is communicated. The significance of the Iron Bridge is known to the educational visitors, but not the Old Furnace or the wider WHS landscape. UNESCO, the 1972 Convention, the World Heritage programme and inscription process are not currently communicated to educational visitors by either the site or lead teachers.

- 'Learning From'- Creative responses are at the core of educational visits to the Ironbridge Gorge WHS. Whether it is directly through post visit learning explicitly focussed on the values of innovation and creativity linked to the ascribed values of the site, or indirectly through the art based activities and Joint Productive Activities which are at the heart of the IGMT learning model.

- 'Learning For'- Given that the international context and UNESCO, the 1972 Convention, the World Heritage programme and inscription

process are not being communicated, the links to the deeper ascribed and human values related to the promotion of conservation and peace are not being fostered. It could be argued however that through the Joint Productive Activities and the experiential learning, that values of teamwork and personal development contribute to the aims of cultural tolerance and understanding.

Through the application of the learning model to the research fieldwork, it is proposed that though there is a longstanding onsite learning programme, and that the educational value of the Ironbridge Gorge is widely recognised and utilised through educational visits, this however predates the 1986 designation. Furthermore, it demonstrates that whilst the ascribed values are at the fore of the onsite learning, the human values and UNESCO's World Heritage Programme specifics are not explicitly communicated during educational visits. Educational users are therefore visiting the Ironbridge Gorge rather than the Ironbridge Gorge WHS. The onsite learning experience is one which follows the pedagogy of museum and heritage education approach rather than being distinctly separate as World Heritage Education. World Heritage Education was defined as an educational approach, which seeks an understanding the ascribed values of the Outstanding Universal Value and the human values of WHS status notably cultural tolerance and peace. The evidence from the case study of the Ironbridge Gorge WHS, is that for most educational visitors this is not the onsite experience.

7.2.2- World Heritage designation is not a learning priority for educational users

As this case study demonstrates, IGMT has successfully "embedded in teacher's minds" (MingStones 2006:19), the museums and landscape as a learning resource. This is apparent given the high number of repeat and residential educational visitors. However, what emerged from the research was that although the World Heritage values are evident through onsite interpretative media they are not the focus of the visits or communicated directly to educational users.

In 1979, the director of the IGMT, hoped that they would be able to help teachers use the Ironbridge Gorge through its multiplicity of narratives, as "a library, a place where with careful selection, it is possible to study a great variety of themes, drawing in many different academic disciplines" (Cossons 1979:184). He hoped that visits would be "a carefully prepared and highly selective experience embracing not only museum sites but the numerous other historical and environmental features of the Gorge". This research 39 years on has shown that, whilst Ironbridge Gorge WHS is a cross curricular learning resource and is utilised for its multiplicity of narratives, the Victorian Period remains the dominant narrative, and the World Heritage narrative and communication of the World Heritage Values are not the "overarching curatorial message" (Fienberg and Leinhardt 2002:209). This was confirmed during the fieldwork by IGMT's Lifelong Learning Manager, who stated that "Ironbridge being a World Heritage Site is our USP [Unique Selling Point], and we certainly don't use it" (Dataset 1). The research confirmed that the learning priorities were driven by the curriculum requirements and the agency of the teacher and museum staff/volunteers.

Unlike other UK WHSs, the Ironbridge Gorge WHS does not have a World Heritage Learning Coordinator/ Education officer or education sub group of the WHS management committee to bring the different educational providers within the WHS together. It does not have a World Heritage Education strategy which would provide a structure for World Heritage resources and pedagogies to be shared and embedded within current institutional structures and learning programmes. More importantly, since 2012, it has not had a World Heritage Coordinator to prioritise and reinforce the obligations of the 1986 inscription. It is no surprise therefore that the World Heritage inscription is not being made the most of, that World Heritage education is not integrated within IGMT's popular formal learning programme and that educational visitors to the Ironbridge Gorge WHS are unaware of World Heritage Values.

The research identified that the World Heritage designation was not a motivation for visiting Ironbridge Gorge WHS and the IGMT museums within it. The curricular links and the historical relationship between the schools and the museums predating the inscription were the primary factors. World Heritage was "not relevant" (Dataset 17) to the observed educational visitors. In contrast to McDonald's (2013) curriculum mapping of UNESCO's World Heritage in Young Hands (WHYH) educational resource, this research identified that World Heritage is not a learning priority amongst the lead teachers from the visiting schools. Moreover, the World Heritage narrative was not consistently communicated by IGMT staff/volunteers and the visiting teachers, with many teachers unaware of the World Heritage inscription and the values it held. The findings confirm Dewar,du Cros and Li (2012:325), who propose that "it is clear that the average visitor has only a vague undertsanding of World Heritage". Where the concept

was understood, it was in relation to the 'Network Effect' and 'World Wonders'. There was also evidence of variables in communicating the World Heritage Values including the agency of the teachers and site staff/volunteers, the age of the students and whether they are local or not. This confirms Shalaginova (2012:18) who concluded that "differences (background, age, class, nationality, religious belief etc.) affect communication and the single message that a communicator tries to convey is received as a number of different messages, some of which can be contrary to the original message".

Importantly for this research Criteria iv of the Statement of Outstanding Universal Value (SOUV) explicitly references the educational value of the WHS, as it recognises that the attributes are "sufficiently well preserved to make up a coherent ensemble whose educational potential is considerable" (IGMT 2017d:21). In terms of World Heritage Education and communicating World Heritage Values, this "educational potential" has not fully been realised. However, the onsite learning provision developed and offered by the IGMT across the Ironbridge Gorge WHS is popular and award winning as evidenced by the desk based research, site based observations and interviews with lead teachers and IGMT staff and volunteers. As stressed in the context chapter, it is important to remember that like many WHSs the IGMT is only one of several stakeholders who offer interpretative programmes and resources for educational visitors. The low priority of the communication of World Heritage Values is therefore not a criticism of IGMT's programme given that they respond to the needs of schools and teachers (driven by curriculum requirements), not to the expectations of UNESCO.

7.2.3- World Heritage Education is not a distinct curriculum theme

The research from the Ironbridge Gorge WHS reaffirmed the cross curricular applicability of WHSs, as recognised by the site management and educational users. This confirms the desk based research as outlined in the literature review and context chapters. For example, it supports the position of World Heritage Programme Officer Richon (2005:54) who stated that, WHSs are "well suited to build bridges across the curriculum in the fields of: art, foreign languages, history, geography, environmental sciences, literature, poetry, music, philosophy, religious studies and information and communication technologies" (UNESCO 2002b).

Despite the rhetoric and aspirations for World Heritage to be a distinct curriculum theme within national curricula, this is not the case in England and is unlikely to ever be the case. The evidence from the Department for Education and lack of response from DCMS indicate that there is a lack of political will and too many restrictions within the formal learning system for World Heritage to become a distinct curriculum theme.

World Heritage is therefore not a motivational factor and the onsite pedagogical content is not focused on UNESCO's World Heritage programme because of this. The findings from the Ironbridge Gorge WHS support research by UNESCO Bangkok (2008:42) that "World Heritage Education is not prioritized; only incorporated into other subjects". The research also supports Grünberg (2014:40) who concluded that "educational programmes at World Heritage sites do not necessarily deal with World Heritage as a concept or convey the World Heritage

idea. Most educational programmes focus on the presentation of the history of the site and only rarely give information about the World Heritage Convention".

No World Heritage specific or UNESCO resources were used by the observed educational visitors to the Ironbridge Gorge WHS. The fieldwork suggested that World Heritage resources (most notably those developed by UNESCO) are not filtering down to the sites or educational users, thereby resulting in a low awareness of World Heritage and World Heritage Education and most notably in UNESCO's World Heritage In Young Hands Kit (UNESCO 2002b). Given that the Operational Guidelines for the World Heritage Programme and initiatives of the UNESCO World Heritage Education Programme are based on the assumption that such resources and learning frameworks will filter down through States Parties to properties and schools, the evidence suggests this is not the case. The fact that the IGMT learning team are only now developing a specific learning pack on World Heritage which will become part of their complete learning offer does show perhaps that attitudes are changing. As discussed in the context chapter, this learning pack and associated classroom based activities provides a potential model for communicating World Heritage Values. However, the evidence from the learning manager at IGMT of the lack of interest by teachers in World Heritage specific resources contrasts to the demand proposed by McDonald (2013) and UNESCO for example the World Heritage Youth Fora recommendations (UNESCO 2002c). This raises questions about to what extent is World Heritage specific resources and programmes driven by demand by educational users and supply either at a school, property, States Party or UNESCO level? If the teachers aren't demanding resources because it is not a priority or because they are unaware of learning opportunities related to the designation, if sites are not developing or

maintaining resources/opportunities because of limited demand and funding, and if resources from higher levels are not reaching schools or out of date, what is the future for World Heritage Education?

7.2.4- The ambiguity of the designation impact on learning programmes

During the fieldwork, the Head of Lifelong Learning for IGMT proposed that the impact of the World Heritage inscription on the educational programme was that "it meant that we developed a service" because it was recognised as a WHS, it made "it sound like quality" (Dataset 1). UNESCO UK (2016a:8) note how the UNESCO designation is viewed as a "mark of quality" and "a mechanism to enhance quality and create value". The evidence from the IGMT supports this.

For tentative and inscribed WHSs, investment in educational facilities is strongly encouraged, as is the development of educational opportunities (programmes, workshops, events, resources, trips) to make the WHS an accessible for classroom and onsite learning. For example, during community consultation at tentative WHSs sites in Ukraine, the development of educational activities was identified as the most sought benefit of inscription (Schneider 2013:310-311). However, as outlined in the context chapter, whilst there had been a limited educational offer within the Ironbridge Gorge up until the 1980s, it is difficult to confirm to what extent the expansion of the learning programme was down to the impact of the 1986 inscription. The Head of Lifelong Learning did comment that it was only until renaissance funding was secured in the early 2000s that the department grew, bringing into doubt the impact of inscription on the development of the educational offer (Dataset 1).

The HM School Inspectorate reports from local schools within the Ironbridge Gorge WHS discussed in the context chapter, does however provide rare evidence of a recognised value of the World Heritage Inscription and potential associated benefits. This supports the findings of a recent report into the value of UNESCO to the UK. UNESCO UK (2016a:13) identified that UNESCO designations help broker local partnerships and work collaboratively, engage the local community with their shared heritage, forge international partnerships and build international visibility and influence. However, overall, the research findings can be considered as evidence supporting Adie *et al's* (2017:13) proposition that the World Heritage brand can "be better understood in terms of it having a placebo effect" at a national and global level in terms of the impact of World Heritage on the onsite learning experience. Given the low awareness amongst educational visitors and low priority in onsite communication by teachers and staff, the perceived impact of the designation does not meet the current evidence.

Confirming the impact of inscription remains a difficult area of research given the need for reliable baseline data and a long-term research scale. As drawn upon earlier in this thesis, it is recognised that "most UK sites were important educational assets long before they gained WHS status" (PricewaterhouseCoopers 2007:82). This research has confirmed that the Ironbridge Gorge WHS is one of the most notable examples of this, which has added complexity in answering the research objectives. At the Ironbridge Gorge the UNESCO World Heritage inscription has not changed the educational experience.

In the Rebanks (2009:91) report on the economic impact of WHS inscription, it builds on the 2007 PricewaterhouseCoopers report when it notes that "the size,

fame and location of the site pre-inscription make a significant difference to its WHS impact". Given that IGMT had a well-established educational programme and offer, the WHS narrative and brand value has not been utilised. The PricewaterhouseCoopers (2007:56) report proposes that "those sites which are relatively less 'famous' are likely to use the status more than others in their marketing activities. These sites are likely to experience a more significant rise in brand value from WHS status because they are less well known to visitors". This explains why sites such as Derwent Valley Mills WHS and Blaenavon WHS have been more proactive in embedding World Heritage within their developing educational programmes.

7.2.5 The disparity between visiting the Ironbridge Gorge and visiting the Ironbridge Gorge WHS

For the first time since IGMT was established as an educational trust in 1967, the geography of visiting educational groups and their pedagogical style and content has been understood. Griffin's (1998:4) museum learning environment factors model, and Kirk's (2014) concept of 'narrative environment' provided the framework for understanding the onsite learning process at the Ironbridge Gorge WHS. This constructivist and contextual learning framework, is a model which is essential for understanding WHSs as learning resources. As recognised by Kirsten (2007:160), "everything in the garden kingdom of Dessau-Wörlitz [German WHS] is educational. A good teacher or guide will find numerous ways to inspire children of different age groups".

By viewing the WHS through the spotlights metaphor (Kirk 2014), what is clear is that Enginuity and the Darby Houses are salient and brightly lit, whilst others such

as the Old Furnace, one of the primary attributes of the World Heritage inscription, "languish in the shadows" during site visits by educational groups. The geography of educational visits therefore contrasts with that of the OUV of the Ironbridge Gorge WHS. The evidence from this research indicates that educational visitors are visiting the Ironbridge Gorge or IGMT Museums rather than visiting the Ironbridge Gorge WHS. This confirms Bryson's (2016:320) observations outlined in the introduction. For most of the visiting schools, heritage assets of the Ironbridge Gorge WHS, were considered as just another science museum (Enginuity) or open-air museum (Blists Hill), alongside competing heritage attractions and non-WHSs such as the Black Country Living Museum. At present and in general, the learning experience is not outstanding and the OUV is not being made the most of.

The research however did identify the significance of residential visits as a mechanism for wider engagement with WHSs. Residential visits were confirmed as important learning mechanisms to provide a deeper level of engagement across the WHS and greater opportunities for the communication of World Heritage Values. The "educational potential" of Ironbridge Gorge WHS as a "coherent ensemble" (UNESCO World Heritage 2016) was evident within these visits, as students had visited multiple sites, as part of a residential visit, and connections were made between the sites.

7.2.6 World Heritage Values are not explicit within the onsite learning process

The research at the Ironbridge Gorge WHS identified that World Heritage Values were not explicitly communicated to visiting schools. Whilst the lead teachers, recognised that both the WHS inscription and human values should be

understood by the students during a visit, and that they should at least leave knowing the site is a WHS, this was not observed in practice. The ascribed and human values set out in the SOUV are implicit but not explicit in educational visits to the Ironbridge Gorge. The 1972 convention was not discussed and the focus was on the national rather than global significance as it was driven by the national curriculum requirements. The WHS onsite learning experience is one which facilitates awareness of the denotative meanings rather than the connotative meanings and associations.

During the fieldwork, the IGMT staff (presenters and demonstrators at Enginuity) did not directly discuss the World Heritage Inscription, only indirectly mentioned the Iron Bridge and did not mention the Old Furnace, despite the educational visitors being situated within this landscape of significance. The overall research results are comparable with Hazen (2008:261) who concluded that the "lack of a consistent message was generally attributed to World Heritage not being seen as a critical message to convey, particularly considering all the other issues that park education programs are expected to address" with the staff having "little concern about the lack of prominence given to World Heritage".

Where OUV and World Heritage Values were communicated, three of the pedagogical approaches outlined in the literature review were evidenced for the first time at Ironbridge Gorge WHS. The World Heritage concept was observed to be communicated through the understanding of significance using the 'Network Effect', 'Wonders of the World' concept and the use of analogies to humanise and make the World Heritage Values relatable within the onsite learning process. The importance of Darby's use of coke rather than charcoal and the fact the iron

bridge was the first iron bridge in the world was communicated by both the teachers and IGMT staff (primarily at the Darby Houses) during educational visits to the WHS. As summarised during an interview with one member of staff, "I will always ask the children questions. Have you been to the iron bridge? What's special about it? It's made of iron. Ok, but what's special about it? It was the first one. Yes, you have got it" (Dataset 5). The agency of the individual volunteers, staff and teachers was identified as a key finding of the fieldwork.

The primary factor in how the World Heritage concept and UNESCO 'are processed' by visiting educational groups is the agency of the teachers. Teachers mediate the WHS landscape. Ultimately, it is they who decide to visit, when to visit, where to visit, the pedagogical style and the pedagogical content. This is dependent on what is of relevance and of interest (curriculum linked) and what is known to them. As recognised by Spalding (2012:15), the "teacher will have a very clear agenda for the visit", as they "interpret the curriculum according to their own experiences, interests and the availability of resources" (Spalding 2012:113).

Silberman (2012:251) proposes that at WHSs, interpretation provides a "deliberative discourse", which provides "pre-packaged experiences and authorised narratives and facts". As illustrated in the context chapter, at the Ironbridge Gorge WHS, the World Heritage inscription is communicated through the UNESCO World Heritage Programme emblem and inscription title, which is included on onsite presentation through operational signage and information boards and gateway signs. The site also includes the required commemorative plaque at Iron Bridge and an interpretative gallery about the World Heritage Programme and Status in Blists Hill. None of these however were successful in

communicating the WHS status to the educational users, given that World Heritage was not the learning focus and the lead teachers were too focused on controlling and directing the students to areas of relevance, which ultimately was not the World Heritage interpretative media.

The research confirms that in terms of World Heritage Education, WHSs "all too often, they are places to passively visit rather than serving as launch pads for learning" (UNESCO Bangkok 2008:7). As proposed in the analysis chapter, the extent to which WHSs provide unique opportunities to embed and foster ascribed and human values in comparison with non-WHSs has been questioned. The research indicates that UNESCO's approach to World Heritage Education is not being followed in that; educational visitors are not "Acting Locally, Thinking Globally" (UNESCO 2000). Rather it is proposed that currently as evidenced by the educational visitors to the Ironbridge Gorge WHS, they are Acting Locally, Thinking Nationally- due to the residential structure and joint productive activity based learning onsite linked to the National Curriculum's learning aims and framework.

One of the main conclusions from this research is that there is a significant dissonance between guidance and practice. Despite the constant call for the embedding of 'human values' by UNESCO and others, as summarised by UNESCO UK (2016a:12) in their report on the value of UNESCO to the UK, who note that WHSs "are intended to promote peace and intercultural understanding as well as the protection of our shared cultural and natural heritage", the reality is that this is either not a priority or that the links are not being made by the educational community or the sites themselves.

7.3-World Heritage Education and States Parties

The UNESCO Operational Guidelines (UNESCO 2015) focus solely on the communication of World Heritage Values at a national (States Parties) level through educational programmes and at property level through onsite presentation. Ultimately, it is the sites themselves, who develop and deliver learning programmes and resources, both onsite and offsite (outreach). World Heritage Education provision is difficult at WHSs, as in many cases they are managed by multiple institutions (often museums), who have their own services and offer (UNESCO 2004b:71).

This research has therefore identified a disparity between the communication of World Heritage Values in practice from the official guidance. It is the disparity between the top down obligations and the bottom up actions, with no lines of communication in between. Section VI.C 217 of the UNESCO World Heritage Convention Operational Guidelines notes that… "States Parties are encouraged to raise awareness of the need to preserve World Heritage. In particular, they should ensure that World Heritage status is adequately marked and promoted on-site" (UNESCO 2015). The fieldwork at the Ironbridge Gorge WHS confirmed Davies' (2014) research that UK WHSs do "mark and promote" the UNESCO inscription and have successful and wide-ranging educational programmes developed by stakeholders within each site. However, it also confirms that in general these programmes do not deliver World Heritage Education, but rather learning in its broadest forms.

This research therefore leads to an identified disparity in terms of the responsibilities for World Heritage Education as enshrined in UNESCO guidance

and the day-to-day reality. The research confirms Wuepper and Patry (2017:19) who recognise the "absence of a unifying communications framework under the World Heritage Convention. Though all sites are said to be humanity's common heritage, there appears to be nothing common in the way individual sites perceive and/or implement their obligations regarding the telling of the World Heritage story".

Stone (2004:2) proposes that Education and Heritage are separate universes. This disparity was confirmed during the research, when the culture/heritage and education departments of the UK States Party was contacted with regards to the UNESCO World Heritage Convention and Operational Guidelines obligations. It is important to note that this separation between education and culture/heritage, reflects the structure of UNESCO, which has separate programme sectors of Education and Culture, however there has been inter-sectoral coordination and cooperation (Logan 2013b:23), for example the WHYH Kit. The response from a member of staff from the curriculum division of Department for Education (Appendix 12- Email from Christina Janse van Rensburg 2017) confirmed that rather than being top down and embedded within the curriculum, World Heritage Education in the UK is something which occurs at site level. The Department for Education stated that "World Heritage does not feature within the curriculum in England. Instead, the transmission of World Heritage values is undertaken by a variety of educational and participatory programmes across the UK's 30 [now 31] World Heritage Sites" (Appendix 12).

The response from the Department for Education delegated the responsibilities to the site staff and management within World Heritage inscribed properties, as it

was noted that "The management team at each of the UK's World Heritage Sites is generally best placed to educate and engage the public on their site's Outstanding Universal Value, both online and via lectures and tours. Educational visits such as those you observed at Ironbridge Gorge form a key part of transmitting this understanding to the next generation" (Appendix 12). However, unlike other UK WHSs (PricewaterhouseCoopers 2007 and Davies 2014), the research identified that Ironbridge Gorge WHS does not have a dedicated educational officer, education steering group or World Heritage specific educational resources. These mechanisms catalyse World Heritage Education and support the inscription obligation to UNESCO at a WHS level.

The Department for Digital, Culture, Media and Sport were also contacted with the same questions, however no response was given. This, along with the property level evidence from the Ironbridge Gorge WHS confirms the absence of responsibility and oversight for communicating World Heritage Values and embedding World Heritage Education. This is a good example of how UNESCO's "mission to change the 'minds of men' has been hampered by the agendas of its primary constituents, the Member States" (Meskell 2018:223), as they fail to enact or prioritise the obligations of the World Heritage programme. This is made worse as, "UNESCO has little power to direct or determine the actions of nations" (Meskell 2018:117).

Stone (2014c:7906) proposes that UNESCO's World Heritage Education programme "has now moved into its second phase, seeking to reinforce the involvement of young people in World Heritage preservation, pursuing efforts to integrate World Heritage Education in school curricula, and encouraging

communities and States Parties to participate in and promote heritage preservation and intercultural learning". UNESCO needs to move beyond rhetoric of the past 20 years of the need "to integrate" (Logan 2013b:35) and "mainstreaming" (World Heritage Centre Paris, Communication, Education and Partnerships Unit 2014) World Heritage Education as a curriculum subject and/or theme. The response from the Department for Education and as observed at the Ironbridge Gorge WHS indicates that 'mainstreaming' World Heritage Education is not happening at present, and it unlikely to ever happen to due to politicisation of the curricula. Furthermore, as this research demonstrates, over 40 years on since the first WHSs were inscribed by UNESCO, whilst the sites may be recognised and utilised as important educational resources, the onsite learning experience fails to embed UNESCO's obligations to 'transmit' the designated values and significance, the concept of World Heritage and the associated human values and ideals, which in reality and probably only UNESCO's institutional values and ideals.

7.4-The limits of World Heritage Education

In March 2016, the UK government published a white paper on Culture in which is stated "we want to set a global standard in the stewardship of World Heritage Sites" (DCMS 2016:46). This research has showcased the realities of World Heritage Education and the disparity between practice and guidance from a site level perspective. It has demonstrated that WHSs are important educational assets and there are successful examples of communicating and fostering World Heritage Values through onsite learning once the pedagogic realities are recognised. By their own definition, no two WHSs are the same, therefore comparing and applying lessons learnt from Ironbridge Gorge WHS to others is

difficult. It is therefore important to finally consider the barriers which prevent WHSs from reaching their true potential as learning resources.

In the 1989 publication chronicling the relationship between the United States and UNESCO, the historian William Preston Jr (1989:5) proposed that UNESCO is "poised between the impossible expectations of its charter and the abysmal realities it has to confront daily". This is certainly the case for the expectations surrounding the educational value of WHSs in relation to UNESCO's aims and objectives.

The second cycle of Periodic Reporting for Europe and North America identified that "nearly 80% of the planned education and awareness programmes are not linked to the values and management of the World Heritage property, therefore indicating that World Heritage Values are not explicitly being communicated at the majority of WHSs in Europe" (UNESCO 2016b:166). This final section identifies some of the reasons for this.

7.4.1 The ambiguity of 'World Heritage Values'

Bentrupperbäumer *et al* (2006:728) noted that in 1996 the Australian government "recognized and documented the confusion associated with the expression 'World Heritage values'. The report acknowledged that there was no consensus on what World Heritage values were, and that there was an absence of any clear definition of the expression". Over twenty years on this still stands true, as confirmed by the evidence from the Ironbridge Gorge WHS.

This research formed part of an AHRC CDA research project. Each of the four studentships were researching the communication of World Heritage Values to different audiences at the case study site of the Ironbridge Gorge WHS. Whilst this research was focussed on the communication of World Heritage Values to the educational community, the research themes of the other collaborators were on communities (Trelka, forthcoming), tourists (Acheson, forthcoming) and industrial heritage (Raine, forthcoming). Whilst each researcher interpreted the concept of World Heritage Values differently, overall World Heritage was identified as being poorly understood and not to be prioritised within the communication and engagement with each stakeholder group. The wider project confirmed that the low awareness of the WHS status and communication of the wider values, is not limited to educational visitors, but to the wider stakeholders of the WHS and general public. Hølleland (2013:119) proposes that it is "only when World Heritage has become a meaningful, recognised and cherished phenomenon to the public, can it become a true international success story". It is clear that at the moment, this is not the case.

There is also evidence of a lack of knowledge and understanding of World Heritage by site managers, as UNESCO workshops revealed that "nearly 30% of them had heard of but never seen the World Heritage Convention; 40% percent had never seen the Operational Guidelines, while an even higher percentage did not understand what both documents meant in practice" (UNESCO 2003a:45). This could not only have significant implications for site management but also in understanding and delivering World Heritage Education. Even in the UK, a DCMS

consultation concluded that there was "concern that OUV is being misunderstood to mean national significance" (Norman 2009:12).

Language barriers are another factor. For example, Periodic Reporting identified that in West and Central Asia, site managers prefer Russian to English, however as resources and training are not always accessible in Russian, this presents a major barrier (UNESCO 2003a:45). UNESCO resources are produced primarily in English and French, the criticism of this as a barrier to global application has been commonly raised (UNESCO 2004b:72, Labadi 2005:287). It should be noted however, that in terms of World Heritage Education, UNESCO has made significant progress with this barrier as the WHYH kit has been translated into 43 languages (Rössler 2018).

As considered in the literature review, 'Universal Value' of World Heritage Values is being challenged by the postmodern cultural relativism and pluralism, which needs to be recognised in terms of communication to educational users:

- For example, how does a young Creationist learn about the Jurassic Coast WHS inscribed as for its physical record of evolution or the Giants Causeway, illustrative of the earth's geomorphic development (Williams *et al* 2012)? In 2013, a Creationist Exhibition was organised simultaneously to the annual Lyme Regis Fossil Fair (Naish 2013).

- How does a Welsh student learn about the Edwardian Castles WHS, when they are still viewed as a symbol of English oppression?

- How do Jewish and Palestinian Children learn about the contested WHS of Jerusalem? On visits to the World Heritage Site, are they made aware it is

'the common heritage of humanity', or is the dominant political/religious narrative solely told. The World Heritage Inscription does have the potential to contribute to peace-building. For example, as part of UNESCO funded Action Plan, WHYH Workshops and summer camps which 50 students took part in were organised and the WHYH Kit was distributed to secondary schools in Jerusalem in 2008-09 (UNESCO 2008, UNESCO 2009, UNESCO 2010).

There is an alternative interpretation of these differences in understanding of the concept of World Heritage and World Heritage Values. Rather than being seen as a breakdown in understanding and values, these differing values confirm the site's 'universal value'. The site is not valued for the same reasons, but valued by many different communities of interest for different reasons, therefore it is 'universally valued'. This is discussed by Appiah (2007:71) who proposes that "we can live together without agreeing on what are the values that make it good to live together; we can agree about what to do in most cases, without agreeing about why it is right". The example of Temple Mount, Jerusalem is provided in that "the problem isn't that they disagree about the importance of Jerusalem; the problem is exactly that they both care for it deeply and, in part, for the same reasons" (Appiah 2007:78). There is a conflict of interest in terms of the same values, because of shared horizons of meaning (Appiah 2007:80-1).

The rapidly changing socio-demographics of the twenty first century along with continued ambiguity of the terminology used by UNESCO, States Parties, site management, stakeholders and the academic community reaffirms the

importance of this study, the wider AHRC project and the need for further research and honest reflections in this area.

7.4.2 The disparity between UNESCO's rhetoric and expectations and the reality of site practice and delivery

Although the World Heritage inscription is communicated at the Ironbridge Gorge WHS through interpretative media, at many WHSs communicating the World Heritage Inscription is not a priority, and the required presentation elements (including the WH emblem) is not present (UNESCO 2004b:72, UNESCO 2013a:96, UNESCO 2007:70-71). Hølleland (2013:119) correctly identified that World Heritage presentation is often communicated through seemingly untidy and visually inconsistent signage and that the "communication and dissemination to the general public is something which often ranks low within the management of past". Logan (2013b:36) concludes "perhaps we expect too much of UNESCO" when it comes to monitoring, enforcing obligations and providing resources, as "it lacks the power to do more than inspire and encourage its member states to behave according to the various normative statements".

Logan (2013b:23) recognises that UNESCO is an intergovernmental organization therefore it "is dependent on the goodwill and collaboration of its member states". Meskell (2018:227) discusses this issue in greater depth as she acknowledges that "perhaps the real and unstated problem is that we imagine international organizations to be more powerful than they really are and expect them to deliver on impossible promises". Meskell (2018:227) suggests that "the utopian dream of UNESCO", has been "severely curbed by sovereign ambitions", "national disinterest" and "the current fiscal crisis" (Meskell 2018:193). Meskell

(2018:86) adds that UNESCO has become an institution comprising of "landscapes of paper", "suffering from 'institutional anaemia'" (ibid:79) and that the "techno-politics of 'guidance culture'" (ibid:84) has resulted in UNESCO becoming "less an ideas factory and more a matter of just managing a factory" (ibid:88). The World Heritage Centre is unable to fully monitor the implementation of the Convention and the obligations of States Parties due to financial and capacity constraints, whilst the States Parties are not incentivised/pressured into fulfilling UNESCO's expectations. This means, even if individual sites have appropriate infrastructure and programmes to support educational visits, the national Member State and UNESCO are unable to ensure that the designation and its wider values are embedded within these. Rather than becoming the everyday experience, World Heritage Education occurs through one off projects and publications during the nomination stage, anniversaries of designation and in the rare instances is the result of proactive teachers and learning officers at the WHS. As we have seen global resources do not filter down to school level and at a national level World Heritage Education is 'a victim of geopolitics' (Meskell 2018:78). The disparity is therefore not just between the theory and practice, but also between the three levels of World Heritage Education: Globally, Nationally and at the Site/School level.

This case study of one long standing WHS therefore highlights the tensions between the stakeholders and users of a WHS. The micro level analysis corresponds with the macro level issues surrounding the ambiguity and awareness of the UNESCO World Heritage Programme and the application of the arm's length pronouncements with site level realities.

7.4.3 Unsustainable initiatives, programmes and capacity building at WHSs

Vujicic-Lugassy and Richon (2008:329) propose that "the long-term aim is to have education integrated into each phase of World Heritage conservation work (legislation, administration, identification, nomination, preservation, periodic reporting, interpretation etc.)". However, the difficulties of developing, delivering and sustaining educational infrastructure and programmes for many WHSs is reflected in Labadi's (2005:178) analysis of inscription nominations, where there were very few references to the educational offer and activities of sites. Furthermore, the limited research and evaluation of World Heritage specific learning programmes and resources prevent this vision from being realised. In the Periodic Reporting (First Phase) for Latin America, it is noted that "most of the investments in training and education have not been accompanied by evaluations, thus making analysis impossible" (UNESCO 2004c:106). This statement is unfortunately applicable for the majority of WHSs. It illustrates one of core challenges of understanding the educational value and practices at WHSs, reaffirming earlier work (Davies 2016), which is the absence of booking data or evaluation data from the whole of a WHS.

As proposed at the 2001 UNESCO Youth Forum (UNESCO 2001), periodic reporting now includes information about heritage education, however overall this information is substandard, for example the number of educational visitors and specific examples of projects and programmes are not included and would be more useful. Despite attempts, to date UNESCO has failed to "develop a base of reliable data - according to scientific criteria and universal values -, on educational material" (UNESCO 2004d:6-7), leaving all the initiatives and resources

fragmented and inaccessible. This research supports Grünberg (2014:40) who notes that "the monitoring process of World Heritage does not include information about educational activities that the sites offer. Integrating a section for education in the management part of the monitoring process would offer the opportunity to gain insights into the current status of World Heritage education at World Heritage sites". For example, at Twyfelfontein, Namibia, inscribed in 2007, over a decade after inscription, it is not known from the visitor records "which of the visitors to the site are schoolchildren" (Imalwa 2018:134). At present Education (formal and informal learning) is included in WHS Management Plans under "Interpretation, presentation and visitor management practices", with the recommendation to note "available educational resources" (UNESCO 2013a:135). The importance of management plans as frameworks for integrating a World Heritage Education approach was recognised by Davies (2014).

Sustainability is a major problem, as many World Heritage Education projects run by schools or WHSs are ad-hoc or funding specific, especially the funding for the education/project officers. As noted in the case of the Antonine Wall, "there have been some exciting projects but these are mostly 'one offs' and resource intensive", because of a lack of funding to roll out examples of good practice (JWF/Scotinform 2012:46). Examples of this include the example from the Cornish Mining World Heritage Site (Kell 2013:8) and Stonehenge WHS, as with the successful 'Stones and Bones' Discovery Visit which was managed by English Heritage for Stonehenge, the intern programme ended in 2012, whilst the National Trust's Guardianship scheme ended in 2012 and funding is sought to continue the successful Avenue to Learning project (Simmonds and Thomas 2014: 153,155). As recognised by Mingstones (2006:4), this approach is unsustainable

and damaging, for example the Hadrian's Wall Community and Education Team worried that "all of the good work done over the last four and a half years is not to be lost". Two examples of the unsustainability of the development of World Heritage Education resources, come from Finland (Auto-Hiltunen 2006) and Poland (HeritageAlive! 2008, Schneider 2013:145-7). Both were online based resources, the Finish comprising of teacher training resources, whilst the Polish was an online gaming based resource, however over 10 years since their development, both sites have not been updated, the web links are broken, and the best practice faded from memory.

Holden's (2008) research into Cultural Learning does correspond with this research into World Heritage Education, in that it has a low status in cultural organisations (Holden 2008:25) and that provision is Ad Hoc. Holden's concluding statement could readily be applied to the position of World Heritage Education, in that it "often takes the form of one-off projects, individual events and single workshops, whereas all interviewees stressed that engagements with learners need to be long-term, deep and sustained" (Holden 2008:19). Given this status; education is the first the face cuts in austerity (Albert 2013:18). Black (2012:142) warning of the impact for museum education is also true for World Heritage Education, as he notes that "as I write, however, museum learning teams are being decimated because of austerity cuts in public expenditure. Years of experience are being lost. Successful programmes being tossed away". This is one of the biggest threats to World Heritage Education, with successes being forgotten and expertise and partnerships lost, resulting in duplication and experimentation, which stretch limited resources and relationships.

Albert (2013:18) proposes new ways of participating, cooperating and finding financial support including public private partnerships, corporate social responsibility and entrepreneurship. It is important that World Heritage Education steering groups are formed and work together coordinating funding applications to avoid competition amongst individual organisations, as is the understanding at the Derwent Valley Mills WHS and Stonehenge and Avebury WHS. There is no learning/education steering group within the Ironbridge Gorge WHS. As recognised by the Stonehenge and Avebury WHS Learning and Outreach Group, it "makes sure we support each other and don't duplicate work" (UNESCO UK 2016a:72).

7.4.4 The impossibility of universal engagement with World Heritage Sites

A common barrier for all WHSs in developing educational programmes is insufficient resources (Thapa 2007:26, Young 2007:5) and staff (UNESCO 2004a:22), as many sites have no provision of education. As recognised by Aplin (2007:378) "the extent and standard of interpretive and educational services associated with these sites is extremely varied", especially as many sites struggle to protect and manage the sites, let alone have time to develop educational programmes and support visits. Forrest (2010) provides an important insight into a teacher's perspective of a WHS as a learning resource, through taking primary teacher training students to Saltaire WHS. The students identified that specific barriers included the lack of an educational space, lack of teacher subject knowledge and safety (guiding the students around the town).

Despite their OUV, WHSs remain difficult to access in both developed and developing countries (UNESCO 2003a:45, Shackley 1998:199). Access to cultural

heritage because of physical infrastructure (national and site), transportation costs and teaching cover are commonly recognised pervasive barriers (Stronck 1983, Ritchie and Coughlan 2003:122, Paton 2010, Boffey 2011, Behrendt and Franklin 2014:242). Even in developed countries this is evident, as illustrated by Sikora (2007) through the experience of the Cahokia WHS. Whilst the study of the site is required by the Illinois state curriculum, its proximity to the Chicago metropolitan area (a six to seven-hour car ride) has resulted in "just 12,138 Illinois students and groups visited the grounds on scheduled trips in 2005, slightly less than 0.6% of all in-state" (Sikora 2007:106). A positive example of this comes from the Tsodilo Hills WHS, Botswana, as recognised by Ndoro (2015:400), school groups comprise 21.2% of visitors as the site is included in the National Curriculum. In order to make the site more accessible, the government investment in improved infrastructure and as a result of a new highway, a typical journey of 6 hours was cut to 45 minutes (Ndoro 2015:400). Given the importance of the WHS to schools across the country, and importance of educational visitors to the WHS, making the site more accessible for day visits, demonstrates an important commitment to fulfilling their potential.

Even in the UK this is a challenge, as the digital learning manager at English Heritage, who is developing online resources as an alternative to onsite visits recognised, "only a small percentage of schools will be able to make it to Stonehenge" (Scott 2014). This is without even factoring in those WHSs which are inaccessible for conservation reasons or for their characteristics for example the island of St Kilda (United Kingdom), sites of conflict such as Palmyra (Syria) or marine WHSs such as the Tubbataha Reef (Philippines).

One of the primary barriers is that there is still not Universal Access to Education in many countries across the World, with an estimated 121 million children out of schools (UN 2014, UNESCO UIS and UNICEF 2015). As recognised at the 1998 WH Youth Forum "young people today, have difficulty learning about and understanding our heritage because of conflicts, wars and economic problems in our countries" (UNESCO 1998). This contrasts with a recent UN report (UN HRC 2011) and Logan (2013b) who both highlight Article 30 of the Convention on the Rights of the Child, the right to access and enjoyment of cultural heritage. A good example comes from the Gambia, where as a result of a sustainable investment programme (The Juffureh-Albreda Revamp Project) at the Kunta Kinteh Island and Related Sites WHS, young children who used to be truant from school and begging tourists could be part of a new children's centre which provides an educational space and opportunities to make crafts which could be sold to tourists and subsidises the learning costs (Cessay 2018).

Another barrier is the pedagogical style and associated resources, as there is no such thing as a Universal Learning Pedagogy. As illustrated through research at the WHSs of Merv (Corbishley and Jorayev 2014), Jerash (Badran 2014) and the Taj Mahal (Edensor 1998), the dominance of textbooks as a learning approach has been underestimated and their role in classroom learning of World Heritage should be researched further. These studies are reflective of the dominance of 'traditional education' across the World, in contrast to the active and experiential onsite learning process experienced at the Ironbridge Gorge WHS. Black (2012:77) rightly recognises "for most of the world, the process is dominated by a hierarchical education system that is still largely based on the nineteenth century concept of the mastery of objective bodies of knowledge". It is therefore essential to acknowledge the global disparity in pedagogical approaches and the applicability of this research to other WHSs.

Efird's (2014, 2015) research illustrates the challenges of environmental education in China, but also for World Heritage Education. Efird (2015:1144-1145) discusses how despite Ministry of Education guidelines which "mandates the 'infusion' of environmental content in every subject at every level of the public-school system', the reality is limited by 'China's high pressure, test-focused educational system", parental concerns about outdoor student safety and distractions from exams, and the limited inclusion of local heritage in textbooks. Efird (2014, 2015) confirms the widespread gap between policy and practice, which is comparable with World Heritage.

Furthermore, whilst this research is set within the context of England for example the National Curriculum, the global variability is obvious. For example, a

discussion around the context of learning in the Netherlands would be evidently different given that there is "no 'state curriculum'; therefore, schools have considerable autonomy concerning content" (De Groot-Reuvekamp *et al* 2014:487).

Finally, Black (2012:77) states that "it must be acknowledged that not all who visit museums will want to become deeply engaged", this stands correct for visits to WHSs. One extreme example of this is the case of two English teenage students on a fieldtrip to the Auschwitz WHS, where they were fined following criminal prosecutions for removing items from the site (Day 2017). During the investigation, it is reported that they "recanted saying they were not aware of the cultural significance of the items" (Mortimer 2015).

7.5-Where next for World Heritage Education?

The evidence from my research suggests that whilst the museums and heritage sites which comprise UNESCO's WHSs are recognised and valued as learning resources, visiting schools on the whole do not engage with them within the framework of the UNESCO World Heritage Programme and the pedagogy of World Heritage Education. At the Ironbridge Gorge WHS, teachers are unaware of the designation and the broader World Heritage Values, the site does not prioritise these values and associated pedagogical approaches are not intergrated within their formal learning programmes. The formal learning curriculum is too restrictive and therefore it is proposed that attempts to universalize and mainstream World Heritage through formal learning would continue to prove limited and shortlived.

Considering the barriers to embedding World Heritage Values within the onsite learning process, where is next for World Heritage Education? Informal learning could provide greater opportunities to communicate and foster World Heritage Values amongst young people. Whilst this research was focused on the formal learning at WHSs (day and residential visits), a clear research gap has been identified. The importance of informal learning must not be underestimated, as Bellamy *et al* (2009:15) notes that "85% of learning in this country [UK] takes place outside formal schooling, and eight out of ten museum and gallery visits by young people happen outside school lessons".

Logan and Wijesuriya (2015:567) propose that in terms of World Heritage Education, UNESCO's relationship with schools fall into two aims:

- "the encouragement of young people to join in UNESCO's campaign to safeguard heritage of Outstanding Universal Value

- and safeguarding heritage that is of value specifically to young people themselves".

The evidence from the Ironbridge Gorge WHS, suggests that the first aim is not being achieved as the UNESCO narrative is not being communicated, however the second aim may be being met, as the site is recognised as an important learning resource and positive values are ascribed to the site. Perhaps informal learning provides greater opportunities for greater engagement with WHSs and a deeper understanding of World Heritage Values through youth programmes such as youth ambassadors, conservation projects and internships. UNESCO Staff Vujicic-Lugassy and Richon (2008:329) conclude that "young people, tomorrow's decision makers, should be encouraged and enabled to participate in heritage

conservation on a local as well as on a global scale". Jaafar *et al* (2016) and Wang *et al* (2016) identified the benefits of such engagement amongst young people at a WHS whilst GoUNESCO (independent from UNESCO), has engaged with thousands of young people around the world with WHSs through social media (GoUNESCO 2017).

Genuine Active Citizenship (English Heritage 2004) through informal learning could result in a greater embedding of World Heritage Values. Grünberg (2014:27) notes an exemplary case of this type of engagement is where school pupils had an active voice in the nomination of a WHS, as a school class in North Rhine-Westphalia, Germany participated in management workshops for Upper Middle Rhine Valley WHS. Natural sites and environmental education programmes are more successful in developing "genuine" activities (Heine *et al* 2012) for examples at the Vega Archipelago WHS in Norway (Johansen 2012:57, Logan 2013b:25). This supports Norman (2009:51) who proposes that "the educational potential of the WHS designation process itself is important: it could be used to strengthen pride in the locality and to help young people to connect with a proud and creative past."

Figure 23: New Lanark WHS roof garden mosaic. Source: Author. 2016.

The desk-based research identified numerous examples of "co-production" (Bordeau *et al* 2015) from UK WHSs. One example of an educational initiative which was hands-on and contributed to the management of the WHS was at Saltaire (England), where "as part of their business and entrepreneurial education, local school pupils recently pitched new designs for the World Heritage Site logo" (UNESCO UK 2016b:29-30). As illustrated in Figure 23, the New Lanark WHS (United Kingdom) roof garden mosaic was the result of a 2008 community project involving residents and schoolchildren inspired by the WHS attributes. This permanent interpretative media resulting from a creative outreach project has also occurred at the Jurassic Coast WHS (Sutcliffe 2013) and the Cornish Mining Landscape WHS (Packer 2015). Such approaches engage students, allow for creative responses to the WHS and create an interpretative legacy that will form part of the 'narrative environment' for future visitors to the WHS. There is an example of this within the Ironbridge Gorge WHS, the Bench Art Installation designed by local primary school children designed to commemorate the 2016-2016 Jackfield Land Stabilisation project, as illustrated by Figures 24a-c. The tiles

designed by the students draw on the attributes of the WHS and the text on the installation states that it is part of the WHS and the conservation project was designed to sustain and enhance the OUV of the site. These example of "co-production" (Bordeau *et al* 2015) and "co-creation" (Clark 2010) by young stakeholders is not only in the sense of tangible products but also by way of fostering the ascribed and human values. One of the recommendations from a DCMS consultation 10 years ago, which needs to be reaffirmed is that "sites should have linked educational and interpretative strategies" (Norman 2009:51), these informal learning projects are good examples of this.

Figure 24a: Photograph of the Jackfield Stabilisation Project Bench Art Installation.

Source: Author. 2018.

Figure 24b: Photograph of the inscription on the Jackfield Stabilisation Project

Bench Art Installation Source: Author. 2018.

Transcript of the inscription- Inscription: TWC [Telford and Wrekin Council]

Jackfield Stabilisation Project 2016 DCLG [Department for Communities and Local

Government] / Protecting and keeping Jackfield part of the Ironbridge Gorge

World Heritage Site – an area of outstanding universal value to humanity.

Figure 24c: Photograph of the dedication on the Jackfield Stabilisation Project

Bench Art Installation. Source: Author.2018.

Transcript: The Jackfield Project Benchart 2016/ Tiles made by children from

Coalbrookdale and Ironbridge Primary School and Woodlands Primary School and

members of the community. A special thanks to Mike Griffiths, Ron Miles, Stewart

White, Dave Macefield, Ruth Gibson, Huw Powell Roberts. / Thanks to Brian

Hiddleston and Nigel Turner of Ibstock Bricks, Atlas Factory. Thanks to Jackfield

Tile Museum and Tom Sapple for the initial concept. Love and thanks to Dave,

Jessie and Angela.

Informal learning projects and programmes therefore allow for a more meaningful and deeper level of engagement and learning, given the constraints of formal learning. As confirmed by Grünberg (2014:38) who states that project based learning is "characterised by a greater flexibility in terms of location, staff and content". There is significant research to support such benefits for example Freire's concept of Participatory Action (Souza 2011), Gardner's (2006) Project Based Learning, UNESCO's (2014c) Collective Learning and McDonald's (2014) discussion of the Project Method. The desk based research also identified examples from other UK WHSs of longer term projects which successfully fostered and embedded human values through informal learning opportunities at WHSs.

Firstly, the Big Jurassic Classroom (Dorset and East Devon WHS). To coincide with the London 2012 Olympics, this initiative was designed to link the values and attributes of the Jurassic Coast WHS to the Olympic and Paralympic values (Ford. n.d). During 2012, the Jurassic Coast Team worked directly with 95 of 250 schools across Dorset and East Devon, training approximately 950 teachers and teaching assistants and engaged with over 4,000 children and young people (Ford. n.d). The programme taught children and young people about the World Heritage values and how they linked to the values of the Olympic and Paralympic Games for example sessions on the OUV of the Jurassic Coast and Global Citizenship (Ford. n.d, Burnett 2012).

Secondly, the 2012 Cultural Olympiad Project (Maritime Greenwich WHS). This was another project which was linked to the London 2012 Olympics, based at the Maritime Greenwich WHS (Davies 2014:107). Primary and secondary schools from the local borough drew inspiration from the collections and themes of the

National Maritime Museum and the Olympic Values / Friendship theme and worked with music and dance practitioners to develop creative responses including dance pieces and films made by further education students from a local college (Davies 2014:107).

Finally, the Technology Then, Technology Now project (Derwent Valley Mills WHS). This was a Heritage Lottery funded project which involved young people aged 16-24 during 2013-14 (Derbyshire County Council 2016). It was a collaborative project between Derbyshire County Council Environmental Studies Service, the DVMWHS, Trent & Peak Archaeology and Nottingham Trent University (Derbyshire County Council 2016). With the WHS as a learning resource, the young participants were training in digital recording, visualization and display (including 3D printing and virtual tours and models) creating valuable digital products for the interpretation of the WHS (Derbyshire County Council 2016).

One of the most successful examples of informal learning at WHSs in the UK, has been the World Heritage Youth Ambassadors project. The Blaenavon WHS Youth Ambassadors pilot programme was built upon the success of the 2008-2014 Schools Explorer Programme (Kiddie 2014, Ford 2014, Taylor 2014). The six-year schools explorer programme used the WHS as an outdoor classroom and with engaged 5000 pupils, citizenship based on the UNESCO concept of 'Acting Locally, Thinking Globally' (UNESCO 2000). The activities aimed to create 'a generation of citizens who have greater pride in their community and as importantly themselves', through the "care, responsibility, concern and respect for all living things and the environment"' (Taylor 2014). The evaluation of the initiative

concluded that 'Citizenship learning has worked –many young people went on to become junior rangers, young volunteers and develop a youth forum' (Blaenavon World Heritage Site 2014), thereby providing a rare example of how WHSs can foster human values and meet the aspirations of UNESCO's World Heritage Education programme.

The Youth Ambassadors initiative was a Heritage Lottery funded programme run by the Blaenavon World Heritage Partnership. It enabled young people, aged 13-25 to learn about the WHS and to organise the fourth UNESCO UK World Heritage Youth Summit (Davies 2015) and the annual World Heritage Day (Visit Blaenavon 2016a,b). The programme has been a successful mechanism for young people to contribute to the management of the WHS but more importantly allow for personal development through the recognition of volunteering hours and provision of accredited training (Visit Blaenavon 2016b). The success of the project has led other UK WHSs to adopt this model for example at Durham, Edinburgh, Greenwich, Pontcysyllte and Fountains Abbey. In September 2018, following a £12.6m redevelopment of the National Maritime Museum, the Maritime Greenwich WHS youth ambassadors contributed to the new permanent My Greenwich gallery which includes a video installation, WHS trail brochure and an interactive display which asks visitors to consider what world heritage is. These initiatives give young people an active voice in the management of the sites and it is hoped that they can become part of the management steering groups. Comparable initiatives were identified through the best practices capacity building initiative in 2012 for example the youth custodians based on the WHYH model at Monte Albán, Mexico which has had 700 volunteers (UNESCO 2012). Such an approach if successful should be applied to all WHSs globally, perhaps replacing

the top down and selective approach currently pursued by UNESCO through the World Heritage Education programme. It would certainly meet the aspirational definition of World Heritage Education which the focal point for UNESCO's World Heritage Education programme promotes, one which 'understands World Heritage as an opportunity to draw attention to social development and to help young people make their voices heard' (Quin 2016:2).

7.6- Management Recommendations

From the analysis of the fieldwork datasets and broader discussion, some key recommendations for IGMT, WHS management and UNESCO can be proposed:

- In early 2018, IGMT announced the launch of their own World Heritage Youth Ambassadors project (IGMT 2018), building on the successful examples from other UK WHSs. This project will allow 13-18-year olds to take part in an accredited Arts Award project within the WHS which aims to develop their communication skills, gain volunteering experience and learn about the history and heritage management of the Ironbridge Gorge WHS. In contrast with the time limited, curriculum focused and teacher mediated engagement of school visits, it is hoped that this informal learning project will allow young people to have a more sustained and deeper level of engagement with World Heritage Values, as has been so successful at other UK WHSs. Establishing a World Heritage Youth Ambassadors programme within the Ironbridge Gorge WHS was going to be one of the recommendations from the research, therefore this proactive step is strongly welcomed by the author.

- Within the Ironbridge Gorge WHS, one recommendation could be an introductory talk to visiting educational groups on arrival at the WHS. During the fieldwork, one teacher commented that "it would have been nice to set the scene I suppose. To go somewhere to have a little chat about why it is a world heritage site, what its importance is. Somewhere that kind of pulls it all together" (Dataset 9). The feasibility of this at Ironbridge Gorge was questioned by the head of lifelong learning at IGMT

who noted that despite being the primary educational provider, most the visits are self-led with limited time onsite, and therefore "we don't actually meet every group that comes here" and therefore they "disappear a lot of the time" (Dataset 1). The Museum of the Gorge was identified as a possible location for such an activity at the start of educational visits, where there is already an introductory video, which is valued by some teachers as discussed in the analysis chapters. One teacher proposed that the introductory video should be at Blists Hill and that it should be "kids focussed…from a kid's point of view that this is a World Heritage Site" (Dataset 7). It is recommended that during the introduction by IGMT staff that they welcome educational groups to the Ironbridge Gorge WHS, saying when it was inscribed, why it was inscribed referring to the significance of the Iron Bridge and the Old Furnace and referring to the concept of OUV, which is not done at present.

- A new learning programme could be developed to suit the preference for residential visits which would allow for the narrative of 'Ironbridge as the Birthplace of Industry' to be better communicated. For example, IGMT should encourage residential educational groups to visit the museums within a structured approach following UNESCO Criterion (iv) as the "Ironbridge Gorge provides a fascinating summary of the development of an industrial region in modern times. Mining centres, transformation industries, manufacturing plants, workers' quarters, and transport networks are sufficiently well preserved to make up a coherent ensemble whose educational potential is considerable" (UNESCO 2013b:284-6). Residential visits could begin at Blists Hill with the World Heritage

exhibition then onto Coalport China Museum and Tar Tunnel, the Old Furnace and the Museum of Iron and finally the Iron Bridge and Tollhouse over the different days. This would allow students to develop their knowledge from the general to the specific, and following the industrial process sequentially and chronologically. From the Victorian Period to the extraction of raw materials (clay, coal, wood and bitumen), the development of canals and the importance of the River Severn to the innovation of cast iron leading to the Worlds' first cast iron bridge and even the heritagisation of the Gorge, which is recognised in the SOUV. This would support Spalding (2012:271) who discusses the importance of the "physical movement around a site, spaces and objects, used to create a comprehensive narrative".

- Understanding and measuring educational visitors is important for evaluation and advocacy for sustained or enhanced funding for sites. Whilst the difficulties of quantifying free cost visits are recognised, UNESCO should encourage that all sites where organisations provide onsite learning programmes, collate and share this data. This data should be present in the WHS management plan and be provided for periodic reporting.

- WHS management plans should include site learning strategies, showcase success through case studies and the quantitative value (educational visitor numbers and outreach) and qualitative educational value (through case studies and listing resources and learning programmes available). WHSs should include schools in the consultation of the management plans, for example Saltaire WHS (Bradford Metropolitan District Council

2014:6). To ensure that learning provision does not slip beneath the radar, targets could be included, for example the following were included in the 2009 Jurassic Coast WHS Management Plan (Jurassic Coast World Heritage Partnership 2009:51):

- "Positive feedback report from >60% of teachers attending INSET training

- Impacts referred to by OFSTED in at least five schools actively using the WHS in their curriculum

- Increase of at least 10% in school visits to coastal visitor centres

- At least five additional UNESCO Associated Schools

- Increase by 5% in the number of young people studying Earth Sciences coming from secondary schools with active links to the WHS

- At least one major research programme and five smaller projects with published outcomes"

7.7 Recommendations for Future Research

In the methodology chapter, the limitations of the research most notably the prioritisation of IGMT sites in Coalbrookdale and the exclusion of the Iron Bridge in the fieldwork were discussed. The timing of the fieldwork prior to the redevelopment of the Coalbrookdale heritage sites was also recognised as a limitation. The multimillion pound IGMT Coalbrookdale master plan and ongoing redevelopment aims "to make it clear to visitors of all ages and levels of interest why Ironbridge was the first British industrial location to be awarded World Heritage Site status" (Beale 2014:117). Embedded in the master plan is the communication of World Heritage Values, as it is the "museum's unique selling point in the crowded museum market" (Beale 2014:117). It is good to see the WHS status being prioritised by management. It will be important to identify to what extent this is successful, in general and specifically for educational visitors. Future research comparable to this study would allow for a deeper understanding of the extent to which educational visitors engage with the WHS given that IGMT have committed to a greater prioritisation of the World Heritage narrative onsite.

This research was limited to the onsite learning, research should therefore be undertaken to understand to what extent World Heritage Education is embedded in classroom learning. During the desk-based research into the educational value of the Ironbridge Gorge WHS, several English further education exam papers used the site as a case study were identified. A recent Travel and Tourism AS level exam case study directly discussed Ironbridge Gorge WHS in terms of the UNESCO Convention and World Heritage programme, site management and visitor profiles and its economic impact (OCR 2017). Other examples include a 2011 GCSE Spanish

speaking test which uses Ironbridge Gorge WHS as the case study (OCR 2011) and 2005 GCSE Geography case study resource – 'The Jurassic Coast: The Case for a World Heritage Site' (Oxford University Press 2017).

Further research is needed on the pre-visit expectations and post visit responses of teachers and recollections of pupils to WHSs, as this research was focused on the teacher's role and use of WHSs. Given the research limitations, student participants were unable to be included in this research; therefore it is essential that any future research is focussed on understanding World Heritage Values within the onsite learning process from a student perspective. As discussed in the literature review, this research has taken a constructivist understanding of learning, values and heritage, and therefore a student perspective is important given that "learners construct meaning on their own terms no matter what teachers do' and 'because people are all different, each person will process knowledge in a different way" (Hooper-Greenhill 2004:157). Furthermore, only one educational group was the focus of this research, future research should target other types for example early years, further and higher education to identify differences in their use of the WHS and the onsite learning process.

Further research is also needed to support the argument made that informal learning initiatives and programmes such as World Heritage Youth Ambassadors provide greater opportunities for the communication and internalisation of World Heritage Values. The principles, mechanisms and approaches relating to the communication of World Heritage Values drawn from the desk based research and as evidenced at the case study site, should form the basis of future research

at other WHSs to support the development of future onsite interpretative strategies and resources.

Given that it is proposed that WHSs are "spaces of intercultural dialogue" (Maddern 2005:32), research into the relationship between international educational visitors should be undertaken to determine this. As noted in the context chapter, the Ironbridge Gorge WHS receives a high number of international students mainly from France. This is comparable with Big Pit, in the Blaenavon WHS (Wragg and Somper n.d:13). International visitors were unable to be included in the study, given the language barriers. Future research should identify the motivations for visiting Ironbridge Gorge WHS and what narratives are prioritized during the visit. Shalaginova's (2012:74) statement that "World Heritage Sites in particular and sites with high levels of foreign visitors should put emphasis on attempting to provide interpretation in multiple languages, as the amount of foreign visitors they attract grows every year", should be a focus of such research. Finally, Chun Tsai's (2002:265) research which identified that there are cultural differences in the expectations of a museum and the role of the teacher during an educational visit, would be important to consider in this context.

Greater understanding is needed of how World Heritage Values are understood by educational visitors from domestic immigrant communities or from minority ethnic backgrounds as this was not a focus of the fieldwork. This should build on the research of Arokiasamy (2012:339), who refers to Ironbridge Gorge WHS, when proposing that…"many immigrant communities have lived near museums and the living landscapes of World Heritage Sites for decades without much

involvement with these sites. For example, four of the 28 [sic] world heritage sites in the UK are situated in London while Ironbridge Gorge is situated 30 miles outside of Birmingham. Both cities are home to large numbers of people of African and Asian descent". In Birmingham, the nearest major city to the Ironbridge Gorge WHS, a recent study identified that pupils spoke 108 different languages, with Urdu, Punjabi, Bengali and Somali following English and the primary language (Oldham 2013). Harris and Reynolds (2014:464) research identified that "students, especially those from minority ethnic backgrounds, feel a lack of personal connection to the past, as they do not see themselves in the history they are taught". More research is needed into the role of WHSs as a mechanism to support cultural inclusion given its supposed OUV.

Further research into education provision and learning experiences at multiple WHSs globally would for the first time allow for a more holistic understanding of the realities and challenges of communicating World Heritage Values and of embedding World Heritage education. This should not be through curriculum mapping or on the potential but rather the realities of the use or non-use of WHSs as learning resource (Davies 2014) and the communication of World Heritage Values. Such research should aim to understand "the nuance, serendipity and intangible aspects of collective learning experiences" (Spalding 2012:113).

Finally, UNESCO UK (2016a:9) in their report on the value of UNESCO to the UK concluded that "there is significant untapped potential for UNESCO". Further research should be undertaken to identify the educational value of other UNESCO designations (Global Geoparks, Biosphere reserves, Memory of the World and Creative Cities). This research should look at how the UNESCO narrative and

human values are communicated within the context of the other members of "the UNESCO family" (UNESCO UK 2017). For example, Robertson-von Trotha and Hauser (2010:74) argue that Memory of the World can be a source of intercultural education. Research has been undertaken into the educational value of these designations including Helena Henriques *et al* (2012) case study of the educational value of The Arouca Geopark, Portugal, however it did not discuss the extent to which the UNESCO narrative was embedded within the onsite learning process.

7.8 Concluding remarks

Following the 2018 UNESCO World Heritage Committee meeting, there were 1092 WHS properties from 167 States Parties inscribed on UNESCO's World Heritage List (UNESCO 2018). UNESCO (2013:35) defines what makes WHSs unique is their OUV, as the "cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity". This cultural diversity and significance of heritage recalls the words of the British Victorian poet and philosopher G. K Chesterton who believed that "the World is not perishing from lack of wonders, it is perishing from lack of wonder" (cited in Jennings 2012: xiv). Conserving these modern-day wonders of the world for future generations and engaging them with this heritage of common importance is at the heart of the World Heritage programme and the associated educational programmes and initiatives which occur at local, national, regional and international levels.

At the New Lanark WHS in Scotland, there is a plaque by its founder and social reformer Robert Owen (1771-1858) which proposes that "At no age is the desire of knowledge stronger than in Childhood". Children have been visiting heritage sites and museums with parents and schools long before they were inscribed by UNESCO as a WHS. The Studley Royal Park and Fountains Abbey Management Plan 2009-2014 (2008:8) notes that the earliest known school visit was recorded in 1851, whilst this study has shown the long development of the Ironbridge Gorge as an educational resource over the past 50 years. The success of IGMT supports the aspiration that WHSs "set standards of educational approaches for

other heritage sites" (UNESCO 2002c), however this research suggests that the inscription has not been a factor in this development.

A pragmatic approach to communicating World Heritage and World Heritage Education is now needed, one where investment is not directed into short-lived resources and programmes, but rather a more sustainable approach ensuring sufficient educational infrastructure is in place to provide universal access for educational users and that the UN human right to cultural heritage is met. It is wonder rather than knowledge, active lifelong learning rather than being educated and through genuine citizenship rather than passive engagement that will ensure that WHSs are valued by current and future generations.

Given the differences between the intended and implemented curriculum, and as World Heritage values are not fully understood or prioritised by site management or educational users, it is suggested that the expectation that World Heritage Education will be fully embedded within the formal learning structure at global, national and school levels is likely to prove impossible. It is recommended that resources and support should instead be refocused to ensure that all WHSs have an inclusive learning infrastructure (including a residential offer) and offer informal learning opportunities. At the very least, all WHSs should be accessible (physically and digitally) learning resources through experiential learning. The focus should be on getting children out to visit WHSs or visiting them virtually. For example, thousands of school children have 'visited' the WHS of Monitcello, USA as part of the virtual field trips initiative (Monticello Digital Classroom 2018). As this chapter has shown, this is not the case at many of the world's most significant sites. If this happens, the process of ascribing, fostering and internalizing values

will occur, irrespective of the curriculum focus or learning aims. Where possible informal learning opportunities based on the World Heritage Values should be promoted. The importance of experiential learning as confirmed during this research, supports Feilden and Jokilehto (1998:97), who in their World Heritage management manual propose that "If schoolchildren do not enjoy their visit, they may avoid all World Heritage sites for many years and not introduce their own children to them. They are a difficult group to keep interested, but it is not in the long-term interest of conservation for them to come and then to be disappointed; better for them not to come at all". Staiff (2013) further confirms the importance of experiential learning i.e. direct engagement with heritage, as he proposes that the learning approach "move beyond 'encyclopaedia in stone' to one which recognises the personal 'wonderment' of the experience" (Staiff 2013:163,172). The personal sensory experience creates an emotional connection to the site, especially in the case of WHS, where the OUV is reaffirmed through the "wow factor experience" (Staiff 2013:167). This supports Egan (1997:97,218) who discusses the importance of "initial wonder" and "awe and wonder" in developing understanding.

More worryingly for UNESCO's obligations and aspirations is the lack of understanding and relevance of the UNESCO narrative and associated human values to the restricted curricula and limited focus of lead teachers. The onsite learning experience does not meet UNESCO's expectation of "Acting Locally, Thinking Globally" (UNESCO 2000). The World Heritage Education principles, approaches and mechanisms identified for the first time in this research however could further support sites to meet Hølleland's (2013:119) proposition that "a sign is a beginning, but it should not end there". IGMT's development of World

Heritage specific resources and by trialling World Heritage Youth Ambassadors indicate a move in the right direction, however caution remains. World Heritage Values are poorly understood by educational visitors and is not demanded by them resulting in limited pedagogical focus and which is made worse by the lack of oversight and focus for World Heritage Education. 'Mainstreaming' such ideals on the ground remains still as much an aspiration as WHSs as resources for 'building peace in the minds of men and women'.

Although Aplin (2007:378) recognises that WHSs provide opportunities to address "issues of peace, inter-cultural understanding, and global environmental protection, all vital to human survival in the twenty-first century", the realities of the onsite learning process observed through the fieldwork has demonstrated that these remain implicit. The link between the ascribed values and human values is not being made and the evidence from the fieldwork at the Ironbridge Gorge WHS wholly supports Rissom's (2007:49) statement that World Heritage Education is in a "isolated and somewhat elitist position". Ironbridge Gorge WHS illustrates Ringbeck's (2008:45) statement that "World Heritage Sites are educational sites"; however, the fieldwork has challenged her proposition that "they convey UNESCO's goals and beliefs to the public".

During the fieldwork, the head of lifelong learning at the IGMT admitted that "those concepts [Peace and cultural tolerance] are very difficult to put across…I'm not sure a three- legged pot is the harbinger of world peace" (Dataset 1). In 1957, the UNESCO's first Director General, Julian Huxley reflected on the "impossibility of UNESCO producing the rabbit of political peace out a cultural and scientific hat" (Laves and Thomson 1957:295). This research has indicated that over 60 years on,

this goal remains noble yet increasingly fractured and challenging to deliver on the ground in practice.

Word Count: 77,452

Appendix 1- Summary of National Curriculum in England requirements after the 2014 revisions

Structure of the national curriculum. Source: Department of Education 2014d.

NB: Correct at the time of research in 2016

	Key stage 1	Key stage 2	Key stage 3	Key stage 4
Age	5-7	7-11	11-14	14-16
Year groups	1-2	3-6	7-9	10-11
Core subjects				
English	✓	✓	✓	✓
Mathematics	✓	✓	✓	✓
Science	✓	✓	✓	✓
Foundation subjects				
Art and design	✓	✓	✓	
Citizenship			✓	✓
Computing	✓	✓	✓	✓
Design and technology	✓	✓	✓	
Languages		✓	✓	

	Key stage 1	Key stage 2	Key stage 3	Key stage 4
Geography	✓	✓	✓	
History	✓	✓	✓	
Music	✓	✓	✓	
Physical education	✓	✓	✓	✓

Appendix 2- Inventory of IGMT learning programmes, workshops and resources

NB: Compiled in 2016 from the Ironbridge Gorge Museum Website and correct at the time of research

Level	Details	Further details	Curriculum Coverage/Theme
Key Stage 1	Blists Hill Victorian Brick Making	'The group watches a demonstration of brickmaking using traditional tools and techniques. They are told about working conditions and child labour and then they make their own individual quarter scale bricks. These are taken home in a cardboard box where they can be allowed to air dry and then be varnished or they can be fired according to the instructions given'.	History, Design and Technology
	Blists Hill Victorian Candle Dipping	'The group is told about the process of candle making and how it has changed. The children then each dip an 8 inch white candle into wax at 65°. They are given the primary colours and successive dips, each shallower than the last, will change the colour of their candle accordingly. They will learn the primary, secondary and tertiary colour spectrum. It is recommended that groups visit the Candle Factory before doing the workshop but if not possible the activity can still be done'.	Art, Science
	Blists Hill Victorian Christmas	'Your class will break into smaller groups to do the activities and then you will have time to visit the exhibits independently. The education staff will plan and timetable your day for you. Activity 1: Candle dipping- The children will produce a festive decorated candle by dipping white candle into scented coloured wax. Activity 2: Christmas card –The children will chose a card design, colour it in and post it home at the Blists Hill Post office. Schools will need to bring stamped addressed envelopes on the day. Activity 3: Christmas fayre-The children will help to prepare the Christmas pudding, compare what was eaten at Christmas in Victorian times and today and the different ways of cooking it. Activity 4-Christmas Traditions. The children will help decorate our tree and look at what went into the Christmas stocking and why and they will play a Victorian Parlour game'.	Art, Design and Technology, Victorians (Social History)
	Blists Hill Victorian Laundry	'The activity takes the form of an interactive demonstration where the children are encouraged to help with pumping the water, using the posser, mangling the clothes and pegging them out on the line. They can then go to the cottage kitchen and see how ironing was done before electricity'.	History, Technology
	Blists Hill	'The group is met and taken to change into costume. Costume is provided for all children and 2	Social History, Maths, Literacy

	Victorian School Session	adults. In the Victorian School the group experiences aspects of a Victorian schoolchild's life including taster maths, literacy and an object based lesson. They take part in a drill lesson in the school yard and learn about the discipline routine they would have been subject to. Self-Taught Session - The group leader will be provided in advance with a resource pack detailing lesson plans and activities'.	
	Enginuity Downhill Buggies	'The workshop begins with an interactive Forces show where the children learn all about Gravity, Friction, Air Resistance and Thrust through exciting Presenter-led demonstrations and experiments. The children are then taught how to construct a simple buggy in a workshop based session. The group will be taught how the components of the buggy are joined together and work to move the buggy down the purpose-built track. Children are encouraged to work as a team to construct their buggy, using both a fixed and free - axle. The teams then design the body of their buggy, evaluating the use of different materials and joining techniques. Presenters will encourage children to consider the forces involved when designing and making their buggy. The children will also have the opportunity to test their buggy throughout the session in order to identify and make improvements. The workshop ends with each of the teams racing their buggy on the Downhill track'.	Science, Technology, Engineering
	Enginuity Electricity Show	'Children have the opportunity to learn all about the sources and uses of electricity through exciting Presenter-led demonstrations and experiments. The children are encouraged to volunteer to assist in demonstrations to create memorable experiences'.	Science
	Enginuity Forces Show	'Children have the opportunity to learn all about Gravity, Friction, Air Resistance and Thrust through exciting Presenter-led demonstrations and experiments. The children are encouraged to volunteer to assist in demonstrations to create memorable experiences'.	Science
	Enginuity Parachuting Parcels	'The aim is to safely drop a raw egg from a height. The workshop begins with a short Presenter -led demonstration of Gravity and Air Resistance. We introduce the children to the effect that these forces have on parachutes. The importance of a slow and accurate delivery is emphasised. The children also have the opportunity to see different examples of shock absorbing packaging. The children then work in teams to design and make their shock absorbing packaging and parachute. We encourage the children to consider how forces will affect their results in terms of weight and size. They are also asked to think about aesthetics. The completed parachutes are released one by	Science

		one from our purpose - built drop zone. The final designs are marked on accuracy, speed of drop, and safety of the cargo (egg)'.	
	Enginuity Rockets	'Children apply their understanding of Forces to the construction of an air propelled rocket. The workshop begins with an interactive Forces show. Children have the opportunity to learn all about Gravity, Friction, Air Resistance and Thrust through exciting Presenter-led demonstrations and experiments. The children are encouraged to volunteer to assist in the demonstrations to create memorable experiences. The children decorate the outside of their rockets and form them around rolling mandrels. The rockets have a rubber nose cone and cardboard fins to control flight. Children have the opportunity to launch their rocket at a target using a compressed air pump'.	Science
	Jackfield Encaustic Tile Decoration	'In the workshop area students will learn the technique of making an Encaustic tile using liquid slip which they will use to infill the inlaid design. This process was used extensively in the manufacture of floor tiles where the final product had to be smooth and unglazed. The designs can be prepared beforehand in school, after a visit to the museum galleries for inspiration or at the start of the workshop. The tiles will be fired and can be collected or posted up to 3 weeks after your visit'.	Art, Design and Technology
	Jackfield Tube Lined Tile Decoration	'In the workshop area students will learn the technique of tube lining a design onto a tile using liquid slip which they then infill using coloured glazes. This process was popular in the Art Nouveau period. They can either produce an individual tile or make a panel by working in groups. The designs can be prepared beforehand in school, after a visit to the museum galleries for inspiration or at the start of the workshop. The tiles will be fired and can be collected or posted up to 3 weeks after your visit'.	Art, Design and Technology
	Now and Then	Activity Sheet- Match the objects- then and now	History
	Coalport China Museum- Faces	'In the workshop area students will learn the basics of working with clay including scoring and using slip to join pieces of clay. Following instructions as a group, they will make the basis of their clay face using a mould. The children will then work in a less structured way to complete the features of their face, ensuring that everyone makes a truly original work of art. The workshop can fit well with topics such as Romans and Greeks. The faces will be dried, fired, glazed and fired again and can be collected or posted between 3 & 6 weeks after your visit'.	Art, History
	Coalport China Museum- Mug	'In the workshop area students will paint plain White glazed mugs with professional-style ceramic paints. These are not available at 'paint -a-pot' cafes and provide a higher level of challenge. The	Art

	Painting	designs can be decided before your visit to fit with your topic or designed on the day after an inspiring tour around the museum. The mugs will be fired and can be collected or posted between 2-3 weeks after your visit. The mugs and paints undergo regular food safety tests and will be a usable souvenir of your visit'.	
Key Stage 2	Enginuity Power Buggies	'Children apply an understanding of electrical circuits, pulleys and forces to the construction of a power buggy racer. Children are taught the principles of buggy design by presenters in a workshop based session. In addition to the construction of a fast buggy, children are asked to consider the aesthetics of their design by choosing a theme, buggy name, and an appropriate sponsor. Children begin by consolidating their understanding of electrical circuits, and then continue to link this to a pulley system. They are taught the principles of gears and pulleys using ratios. Children learn the technical vocabulary of the buggy components. The effect of forces on the buggy is identified and children are asked to consider these issues when designing their buggy. They have the opportunity to use a range of joining techniques, tools and materials, including glue guns. Presenters give an introduction to safe working practices. Throughout construction time the teams have the opportunity to test, evaluate and improve their designs before the final race. Each buggy is raced individually and timed'.	Science, Engineering, Design and Technology
	Enginuity Rockets	'Children apply their understanding of Forces to the construction of an air propelled rocket. The workshop begins with an interactive Forces show. Children have the opportunity to learn all about Gravity, Friction, Air Resistance and Thrust through exciting Presenter-led demonstrations and experiments. The children are encouraged to volunteer to assist in the demonstrations to create memorable experiences. The children decorate the outside of their rockets and form them around rolling mandrels. The rockets have a rubber nose cone and cardboard fins to control flight. Children have the opportunity to launch their rocket at a target using a compressed air pump'.	Science
	Jackfield Encaustic Tile Decoration	'In the workshop area students will learn the technique of making an Encaustic tile using liquid slip which they will use to infill the inlaid design. This process was used extensively in the manufacture of floor tiles where the final product had to be smooth and unglazed. The designs can be prepared beforehand in school, after a visit to the museum galleries for inspiration or at the start of the workshop. The tiles will be fired and can be collected or posted up to 3 weeks after your visit'.	Art
	Jackfield Tube	'In the workshop area students will learn the technique of tube lining a design onto a tile using	Art

	Lined Tile Decoration	liquid slip which they then infill using coloured glazes. This process was popular in the Art Nouveau period. They can either produce an individual tile or make a panel by working in groups. The designs can be prepared beforehand in school, after a visit to the museum galleries for inspiration or at the start of the workshop. The tiles will be fired and can be collected or posted up to 3 weeks after your visit'.	
	Enginuity Electricity Show	'Children have the opportunity to learn all about the sources and uses of electricity through exciting Presenter-led demonstrations and experiments. The children are encouraged to volunteer to assist in demonstrations to create memorable experiences'.	Science
	Enginuity Forces Show	'Children have the opportunity to learn all about different types of energy through exciting Presenter -led demonstrations and experiments. The children are encouraged to volunteer to assist in demonstrations to create memorable experiences'.	Science
	Enginuity Forensics	'Students are challenged to investigate a "crime scene" within Enginuity and use modern forensic science investigation techniques to solve the crime and identify the culprit. Three potential suspects are identified, all with motive, and opportunity. It is up to the students to apply critical thinking skills to the evidence in order to draw conclusions about the true events. During the workshop students have the opportunity to use modern technology and techniques such as blood and fibre analysis, crime scene photography, fingerprinting, chromatography and the theory of exchange'.	Science
	Enginuity Machines and Robots	'The group will discuss simple and complex machines and their ideas of what is a machine and what is a robot. In pairs they will then construct a jitterbug by attaching a circuit to a frame with an eccentric cam which will make it jump around. They will then decorate their machine. There is a Machines Trail for use around the exhibits in the Museum'.	Engineering, Design and Technology
	Enginuity Pewter Puzzles	'Students work in teams to use CAD (computer aided design) and pewter casting to create a key ring design. Students are introduced to the principles of casting and are shown examples from everyday life. Presenters provide tuition on the basic techniques and tools for using the CAD software before children begin to design a team key ring. Each design is cut from acrylic using a	Design and Technology

		laser cutter. The laser cut designs are imprinted onto foam which is used to cast the pewter into the design. Once the pewter is cool the students use tools to remove the foam to clean their final product'.	
	Enginuity Pneumatic Cranes	'Children use a pneumatic system to create a crane or 'moving monster' to attempt to lift weights. The use of air as 'Pneumatics' is introduced through an interactive presenter led show. Children have the opportunity to volunteer to assist in various demonstrations to illustrate the use of inflatables, Pneumatic Systems and Compressed Air. Using nets they assemble a crane resembling a dragon and will then use syringes to create a pneumatic system to make it move. Once decorated the children will then use their monster to lift weights. The importance of evaluation and improvement is emphasised during the design process'.	Science, Design and Technology
	Enginuity Pneumatics Show	'The children are encouraged to volunteer to assist in demonstrations to create memorable experiences. Explain how pneumatics influence everyday objects'.	Science
	Enginuity Wind Turbines	'Children learn how wind turbines can be used to generate electricity and design their own examples. The workshop begins with an interactive Presenter-led show about how wind turbines can be used to create electricity. The children have the opportunity to volunteer to take part in the demonstrations. We explain how energy can be transferred and look at how the forces exerted on a wind turbine can affect its performance. The children work in pairs to create a wind turbine that will generate electricity in both high and low wind. We have a purpose built wind tunnel to test each wind turbine and record the results'.	Science
	Brick Making Resource Pack	'Brick Making at Blists Hill Victorian Town. A resource pack to accompany the workshop available on site. In this workshop children use traditional tools and techniques to make a brick by hand, and experience some of the working conditions endured by Victorian child labourers. The workshop takes place in an authentic and highly atmospheric Victorian setting. The finished bricks are taken back to school, where they should be dried and fired or varnished according to the instructions provided. This resource pack contains lesson plans and activities that can be launched from the brick-making workshop. It encompasses history, literacy, citizenship, numeracy, science and art Contents of resource pack'.	History, Literacy, Citizenship, Numeracy, Science, Art
	Intaglio Printing	Intaglio Resource Pack	Art

	Resource Pack		History Design and Technology
	Blists Hill Adventures in Print	'It introduces young artists to a variety of printmaking processes, and should result in 3 or 4 finished pieces by the end of the session, along with test prints and sketches. These can make a great addition to coursework/Arts Award portfolios, or a striking display. For those already familiar with some of the techniques it will develop their skills and ideas further'.	Art, Design and Technology
	Blists Hill Intaglio	'In the workshop students will learn what Intaglio means and how it was used. They will see a demonstration of the techniques used. They will see examples and then either produce a design and etch it onto Perspex or work with a design they have brought with them. Once etched they ink the design and transfer it onto card using our presses. One design in Black ink and one in a colour if time permits. There is a resource pack associated with this workshop to download'.	Art
	Blists Hill Soap Making	'This exciting new workshop encompasses the science and history of soap by giving children an opportunity to make their own bar of soap to take home. The workshop lasts for 30 minutes per Session so still leaves plenty of time for lunch and a tour of Blists Hill (including a visit to the Chemists and Wash House)'	Science
	Blists Hill Typesetting and Printing	'This short activity gives hands on experience of typesetting, coining and printing to show how the Victorians produced printed text in the days before word processing and electronic printers. Children create simple text by assembling moveable type then locking it in place before printing their text on a piece of card. Printed cards can be taken home on the day, though the water based ink may take 24 hours to fully dry. Various Education reforms throughout the latter half the 19th Century resulted in a rapid increase in literacy levels and, thus, the demand for printed material - books, posters, newspapers, leaflets etc. After the workshop, visit John Edmunds Shop in the town for a more in depth explanation of the trade, and see how a Victorian printer kept up with this new demand'.	History, Design and Technology
	Blists Hill Victorian Brick	'The group watches a demonstration of brickmaking using traditional tools and techniques. They are told about working conditions and child labour and then they make their own individual quarter scale bricks. These are taken home in a cardboard box where they can be allowed to air dry	Design and Technology.

	Making	and then be varnished or they can be fired according to the instructions given'.	
	Blists Hill Victorian Candle Dipping	'The group is told about the process of candle making and how it has changed. The children then each dip an 8 inch white candle into wax at 65°. They are given the primary colours and successive dips, each shallower than the last, will change the colour of their candle accordingly. They will learn the primary, secondary and tertiary colour spectrum. It is recommended that groups visit the Candle Factory before doing the workshop but if not possible the activity can still be done'.	Design and Technology. Art.
	Blists Hill Victorian Laundry	'The activity takes the form of an interactive demonstration where the children are encouraged to help with pumping the water, using the posser, mangling the clothes and pegging them out on the line. They can then go to the cottage kitchen and see how ironing was done before electricity'.	History
	Blists Hill Victorian School Session	'The group is met and taken to change into costume. Costume is provided for all children and 2 adults. In the Victorian School the group experiences aspects of a Victorian schoolchild's life including taster maths, literacy and an object based lesson. They take part in a drill lesson in the school yard and learn about the discipline routine they would have been subject to. Self-taught session available.'	History, Mathematics, literacy.
	Enginuity Bridging the Gap	'Children work in teams to design a truss structure bridge using CAD (Computer Aided Design) software. They then build their designs from paper art straws with the aim of testing their bridge to destruction. The workshop begins with an interactive Presenter-led show about bridge structures. The children have the opportunity to volunteer to take part in demonstrations. The show identifies a range of common bridge designs and explains how forces act upon the structures in different ways. Children learn how compression and tension affect the strength of structures and the importance of testing designs in order to maintain safety. We also consider other factors influencing modern bridge designs such as aesthetics and budget. The children split into teams to design a Truss Structure Bridge on CAD software. Children are asked to work within a budget and with specific materials. Throughout the design process the software allows the children to test their design to see if it is successful. Once the teams have created successful designs they are given printed plans to build a model from paper art straws. All bridges are tested to destruction to see how much weight they can hold. The weight	Design and Technology, Engineering

		they can hold is compared to the weight of the bridge in order to calculate which bridge is the most efficient'.	
	Enginuity Parachuting Parcels	'The aim is to safely drop a raw egg from a height. The workshop begins with a short Presenter-led demonstration of Gravity and Air Resistance. We introduce the children to the effect that these forces have on parachutes. The importance of a slow and accurate delivery is emphasised. The children also have the opportunity to see different examples of shock absorbing packaging. The children then work in teams to design and make their shock absorbing packaging and parachute. We encourage the children to consider how forces will affect their results in terms of weight and size. They are also asked to think about aesthetics. The completed parachutes are released one by one from our purpose-built drop zone. The final designs are marked on accuracy, speed of drop, and safety of the cargo (egg)'.	Science
	Coalport China Museum - Faces	'In the workshop area students will learn the basics of working with clay including scoring and using slip to join pieces of clay. Following instructions as a group, they will make the basis of their clay face using a mould. The children will then work in a less structured way to complete the features of their face, ensuring that everyone makes a truly original work of art. The workshop can fit well with topics such as Romans and Greeks. The faces will be dried, fired, glazed and fired again and can be collected or posted between 3 & 6 weeks after your visit'.	Art, Design and Technology , History
	Coalport China Museum - Landscapes	'In the workshop area students will learn the basics of working with clay including scoring and using slip to join pieces of clay. Following instructions as a group, they will make the basic plaque for their clay landscape and then make the various elements and add to the plaque. They will paint their finished piece using coloured slip. The workshop can fit well with many topics such as a local history study. The plaques will be dried, fired, glazed and fired again and can be collected or posted between 3 & 6 weeks after your visit'.	Art, Design and Technology , Local History
	Coalport China Museum - Mug Painting	'In the workshop area students will paint plain White glazed mugs with professional - style ceramic paints. These are not available at 'paint-a-pot' cafes and provide a higher level of challenge. The designs can be decided before your visit to fit with your topic or designed on the day after an inspiring tour around the museum. The mugs will be fired and can be collected or posted between 2-3 weeks after your visit. The mugs and paints undergo regular food safety tests and will be a usable souvenir of your visit'.	Art, Design and Technology

Key Stage 3 and 4	Blists Hill Adventures in Print	'It introduces young artists to a variety of printmaking processes, and should result in 3 or 4 finished pieces by the end of the session, along with test prints and sketches. These can make a great addition to coursework/Arts Award portfolios, or a striking display. For those already familiar with some of the techniques it will develop their skills and ideas further. Intaglio Printmaking: Using clear acrylic sheets as printing plates allows students to follow existing designs or develop new ones in the work shop. Monoprinting: Experimenting with ink application and removal techniques to create dramatic prints. Letterpress: Finding out how people made text the days before Microsoft Word. Collagraph: Another form of relief printing which can produce a variety of textures and dramatic effects. Combined techniques: Bringing two, or even three techniques together to create a finished piece'.	Art
	Blists Hill Intaglio	'In the workshop students will learn what Intaglio means and how it was used. They will see a demonstration of the techniques used. They will see examples and then either produce a design and etch it onto Perspex or work with a design they have brought with them. Once etched they ink the design and transfer it onto card using our presses. One design in Black ink and one in a colour if time permits'.	Art, Design and Technology
	Blists Hill Soap Making	'This exciting new workshop encompasses the science and history of soap by giving children an opportunity to make their own bar of soap to take home'.	Science
	Blists Hill Victorian Brick Making	'The group watches a demonstration of brickmaking using traditional tools and techniques. They are told about working conditions and child labour and then they make their own individual quarter scale bricks. These are taken home in a cardboard box where they can be allowed to air dry and then be varnished or they can be fired according to the instructions given'.	History, Design and Technology
	Blists Hill Victorian Candle Dipping	'The group is told about the process of candle making and how it has changed. The children then each dip an 8 inch white candle into wax at 65°. They are given the primary colours and successive dips, each shallower than the last, will change the colour of their candle accordingly. They will learn the primary, secondary and tertiary colour spectrum. It is recommended that groups visit the Candle Factory before doing the workshop but if not possible the activity can still be done'.	Art
	Enginuity Bridging the Gap	'Children work in teams to design a truss structure bridge using CAD (Computer Aided Design) software. They then build their designs from paper art straws with the aim of testing their bridge to destruction. The workshop begins with an interactive Presenter-led show about bridge structures.	Design and Technology , Mathematics

		The children have the opportunity to volunteer to take part in demonstrations. The show identifies a range of common bridge designs and explains how forces act upon the structures in different ways. Children learn how compression and tension affect the strength of structures and the importance of testing designs in order to maintain safety. We also consider other factors influencing modern bridge designs such as aesthetics and budget. The children split into teams to design a Truss Structure Bridge on CAD software. Children are asked to work within a budget and with specific materials. Throughout the design process the software allows the children to test their design to see if it is successful. Once the teams have created successful designs they are given printed plans to build a model from paper art straws. All bridges are tested to destruction to see how much weight they can hold. The weight they can hold is compared to the weight of the bridge in order to calculate which bridge is the most efficient'.	
	Enginuity Cantilever Challenge	'A cantilever structure is a self-supporting structure which holds a ping pong ball up and away from the surface it is built onto. Each team is provided with a kit of 50 craft straws, a ping pong ball and 2metres of string. The success of cantilever structures is measured by calculating the height of the ping pong ball from the base, multiplied by the distance of the ping pong ball from the last supporting column (vertical distance x horizontal distance). The greatest total wins. Examples of cantilevers in everyday life include football stadium stands and cranes. This is a simple activity that gives groups the opportunity to be innovative and competitive, using teamwork and problem solving skills'.	Design and Technology, Engineering
	Enginuity Forensics	'Students are challenged to investigate a "crime scene" within Enginuity and use modern forensic science investigation techniques to solve the crime and identify the culprit. Three potential suspects are identified, all with motive, and opportunity. It is up to the students to apply critical thinking skills to the evidence in order to draw conclusions about the true events. During the workshop students have the opportunity to use modern technology and techniques such as blood and fibre analysis, crime scene photography, fingerprinting, chromatography and the theory of exchange'.	Science
	Enginuity Innovation Challenge	'The Enginuity Innovation Challenge, is a newly-developed workshop that aims: to encourage creativity in each student. The challenge is suitable for Key Stage 3 and 4 students, particularly those studying Product Design. Students are presented with a specific design challenge based	Design and Technology

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		within a chosen theme. This information can be issued prior to the workshop to encourage research. They are asked to develop a brief and specifications appropriate to this challenge, as parameters through which to develop a range of designs. The student's ideas are then refined through a process of evaluation and peer review. The students each build a single prototype model, using a range of craft materials in an effective and appropriate way. Emphasis is put upon the importance of creativity and innovative throughout the workshop. The Innovation Challenge incorporates the key principles of design development required for all students. The theme and design challenge for each workshop can be negotiated with the Enginuity Education Team based upon the aims of the group'.	
	Enginuity Pewter Puzzles	'Students work in teams to use CAD (computer aided design) and pewter casting to create a key ring design. Students are introduced to the principles of casting and are shown examples from everyday life. Presenters provide tuition on the basic techniques and tools for using the CAD software before children begin to design a team key ring. Each design is cut from acrylic using a laser cutter. The laser cut designs are imprinted onto foam which is used to cast the pewter into the design. Once the pewter is cool the students use tools to remove the foam to clean their final product'.	Design and Technology
	Enginuity Power Buggies	'Children apply an understanding of electrical circuits, pulleys and forces to the construction of a power buggy racer. Children are taught the principles of buggy design by presenters in a workshop based session. In addition to the construction of a fast buggy, children are asked to consider the aesthetics of their design by choosing a theme, buggy name, and an appropriate sponsor. Children begin by consolidating their understanding of electrical circuits, and then continue to link this to a pulley system. They are taught the principles of gears and pulleys using ratios. Children learn the technical vocabulary of the buggy components. The effect of forces on the buggy is identified and children are asked to consider these issues when designing their buggy. They have the opportunity to use a range of joining techniques, tools and materials, including glue guns. Presenters give an introduction to safe working practices. Throughout construction time the teams have the opportunity to test, evaluate and improve their designs before the final race. Each buggy is raced individually and timed'.	Engineering, Science, Design and Technology
	Enginuity Table	'Pupils are grouped into teams of approximately 10. They are then challenged to design and make	Design and technology, Science,

	Tennis Triathlon	3 structures that will either hold or transport a table tennis ball using a selection of materials. Each team competes to build the most successful structures. The Table Tennis Triathlon is intended to encourage innovation, problem solving and teamwork. For example; Cantilever structure- A cantilever structure is a self-supporting structure which holds a ping pong ball up and away from the surface it is built onto. Fan Car- Students build a car that is powered by a fan. Students must use their existing knowledge of circuits to power the vehicle. The car must hold the table tennis ball and transport it along the track. Catapult- Students build a catapult with the aim of achieving maximum accuracy by aiming the balls into hoops with different scores. (Challenges are subject to change. Please ask a member of museum education staff prior to your visit if you have any specific requirements). Examples of each structure will be displayed for the students to inspect, and conduct research throughout the workshop. Additional points will be awarded for interesting, unusual and innovative designs. Teams must manage and delegate tasks within the group, ensuring they have enough time to complete structures to a high standard'.	Engineering
	Enginuity Wind Turbines	'Children learn how wind turbines can be used to generate electricity and design their own examples. The workshop begins with an interactive Presenter-led show about how wind turbines can be used to create electricity. The children have the opportunity to volunteer to take part in the demonstrations. We explain how energy can be transferred and look at how the forces exerted on a wind turbine can affect its performance. The children work in pairs to create a wind turbine that will generate electricity in both high and low wind. We have a purpose built wind tunnel to test each wind turbine and record the results'.	Science, Design and Technology
	Jackfield Encaustic Tile Decoration	'In the workshop area students will learn the technique of making an Encaustic tile using liquid slip which they will use to infill their inlaid design. This process was used extensively in the manufacture of floor tiles where the final product had to be smooth and unglazed. The designs can be prepared beforehand in school, after a visit to the museum galleries for inspiration or at the start of the workshop. The tiles will be fired and can be collected or posted up to 3 weeks after your visit'	Art, Design and Technology
	Jackfield Tube Lined Tile	'In the workshop area students will learn the technique of tube lining a design onto a tile using liquid slip which they then infill using coloured glazes. This process was popular in the Art Nouveau period. They can either produce an individual tile or make a panel by working in groups. The	Art, Design and Technology

	Decoration	designs can be prepared beforehand in school, after a visit to the museum galleries for inspiration or at the start of the workshop. The tiles will be fired and can be collected or posted up to 3 weeks after your visit'.	
	Coalport China Museum - Faces	'In the workshop area students will learn the basics of working with clay including scoring and using slip to join pieces of clay. Following instructions as a group, they will make the basis of their clay face using a mould. The children will then work in a less structured way to complete the features of their face, ensuring that everyone makes a truly original work of art. The workshop can fit well with topics such as Romans and Greeks. The faces will be dried, fired, glazed and fired again and can be collected or posted between 3 & 6 weeks after your visit'.	Art, Design and Technology
	Coalport China Museum - Landscapes	'In the workshop area students will learn the basics of working with clay including scoring and using slip to join pieces of clay. Following instructions as a group, they will make the basic plaque for their clay landscape and then make the various elements and add to the plaque. They will paint their finished piece using coloured slip. The workshop can fit well with many topics such as a local history study. The plaques will be dried, fired, glazed and fired again and can be collected or posted between 3 & 6 weeks after your visit'.	Art, Design and Technology, Local History Study.
	Coalport China Museum - Mug Painting	'In the workshop area students will paint plain White glazed mugs with professional - style ceramic paints. These are not available at 'paint-a-pot' cafes and provide a higher level of challenge. The designs can be decided before your visit to fit with your topic or designed on the day after an inspiring tour around the museum. The mugs will be fired and can be collected or posted between 2-3 weeks after your visit. The mugs and paints undergo regular food safety tests and will be a usable souvenir of your visit'.	Art
	GCSE History Controlled Student Pack	Resource- Coalbrookdale History Around Us AO1 AO2 AO3. Student Visit Pack. 'The Coalbrookdale Museum of Iron and Darby houses commemorate the achievements of the Darby family who lived in Coalbrookdale during the 18th and 19th centuries. The Darby family were inspirational in developing innovations within the Iron Industry throughout Britain's Industrial Revolution. The Darbys were Quakers and religion was very important to them. They are remembered as philanthropic employers. During your visit to the Museum and the village of Coalbrookdale you will be gathering evidence to explore the statement'.	History- enquiry based

	Resource - Enginuity - School Challenge Sheet	Activity Sheet	Science
Further Education -Leisure and Tourism venue students	Resource - Travel and Tourism Diploma	Travel & Tourism Diploma Resource Pack 'Destination Management in a World Heritage Site This resource pack provides learners with 2 specific sets of information. The first is a set of questions that the attraction has answered specially for Diploma Students, and covers Topics 2.2, 2.3, 2.4, 2.5, 2.6 , and 2.7. The second set of information, in the folder 'Supporting Information' contains images, maps, visitor information, recruitment and HR paperwork and podcasts covering employability, marketing and World Heritage. The two sets of information can be used together or separately in a wide variety of ways. Relationship with PL specifications. Resources can be used to cover a range of issues related to travel and tourism, including: Transport and accessibility, World Heritage, Sustainability, Operations Management, Customer Service, Marketing Management, Attractions management, Destination Management'.	Travel and Tourism World Heritage
	Resource - Leisure and Tourism	Resource pack Leisure and Tourism Museum Information Sheets Help with Leisure and Tourism (GCSE, AVCE and GNVQ)	Leisure and Tourism
	Travel and Tourism Diploma Podcast - Marketing	Resource- podcast	Leisure and Tourism
	Travel and Tourism Diploma Podcast – Operations	Resource-podcast	Leisure and Tourism

Not in print resources:	Alton, G.1987. *Exploring Coalbrookdale: a record of your visit*. Ironbridge Gorge Museum. Stanley Thornes. Cheltenham. IGMT Archive. Ironbridge.
	Alton, G.1988. *The Iron Bridge: A Record of your Visit*. Ironbridge Gorge Museum. Stanley Thornes. Cheltenham. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust. 1989. *Under Fives and Museums: Guidelines for Teachers*. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust.1990a. *The GCSE and Museums*: *a handbook for teachers*. Ironbridge Gorge Museum Trust. Printed by Printex Press Limited. Telford, Shropshire. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust. 1990b. *Primary schools and Museums: Key Stage 1. Guidelines for teachers*. Education at Ironbridge Series. David Forber (Head of Education). June 1990. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Printext Press Ltd. Telford. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust. 1991. *Ironbridge Gorge Museum Teacher' Handbook*. BP Educational Service. First published by the Ironbridge Gorge Museum Trust 1981. Revised 1986. Printed by Printex Press Limited. Telford, Shropshire. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust. 1992. *Primary schools and Museums: Key Stage 2. Guidelines for teachers*. Education at Ironbridge Series. David Forber (Head of Education). November 1992. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust. 1993. *The Ironbridge Gorge and Coalbrookdale 1750-1900. Key Stage 3. Information for teachers*. Education at Ironbridge. December 1993. David Forber (Head of Education). Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust.1994. *Coalport and Jackfield 1750-1900. Key Stages 2 and 3. Information for teachers.* Education at Ironbridge. October 1994. David Forber (Head of Education). Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust.1995. *Science and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. David Forber (Head of Education). February 1995. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.
	Ironbridge Gorge Museum Trust. 1996a. *Art and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). October 1996. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1996b. *Design and Technology and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). April 1996. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust.1996c. *Geography and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). April 1996. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1997. *History and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). September 1997. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Appendix 3: UNESCO World Heritage Programme Criteria

i- to represent a masterpiece of human creative genius;

ii- to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;

iii- to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

iv- to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

v - to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;

vi- to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);

viii- to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

viii- to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

ix- to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

x- to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Source: UNESCO. 2018. *The Criteria for Selection*. UNESCO World Heritage Centre. Available from: http://whc.unesco.org/en/criteria/ .Accessed 03/03/2018.

Ironbridge Gorge – A World Heritage Site.

This package consists of a school based lesson followed by a day visit to the Coalbrookdale site. It contains learning activities that identify the Values and Attributes of an Individuals heritage, an areas heritage and the Outstanding Universal Value that made Ironbridge a WHS.

The aims are to:

- Create a virtual Museum of Self to explain the terms Value and Attribute. Through looking at what children think is important in their own lives (Values) and what they would include in a Museum about themselves to illustrate those values (Attributes). The children will complete either a sheet divided into 6 sections or an A3 zine with 6 pages plus covers.

- Identify the things that they think are important in the area of Coalbrookdale in a historical or current sense. e.g. iron industry, transport, water, people, housing, wildlife (Values)

- Identify things they can see that link to the various Values such as the buildings, railway water courses and pool etc. (Attributes) The children will complete a Spotting attributes form

- Discover which of the Values and Attributes had a worldwide impact (Universal Value)

- Using their knowledge of the area extend the idea of Universal Value to the rest of the Gorge identifying the main Values and Attributes and

mapping them. Annotate a large map showing attributes and why we value them.

Possible practical activities:

- Model making to recreate buildings etc. using card or Fab Lab

- Iron on a stick

Materials

Sketch books and pencils

A3 sheets of white paper

Coloured pencils

Digital cameras.

Post it notes

Map of Coalbrookdale area

Map of Gorge

Iron on a stick resource

Spotting attributes form

Appendix 5: Research Participant request letter

<div align="right">18/01/2016</div>

Research Participation Consent letter to Teachers

Dear ……

PhD research is being undertaken as part of an Arts and Humanities Research Council (AHRC) Collaborative Doctoral Award between the Ironbridge Gorge Museum Trust and the Ironbridge International Institute for Cultural Heritage, University of Birmingham. The research is on formal education within the Ironbridge Gorge World Heritage Site.

As part of the research, fieldwork through the observation of formal educational groups to the Coalbrookdale museums of the Ironbridge Gorge Museum Trust is planned for May-July 2016, with a pilot study period in March 2016. Primary school and secondary school groups booked to visit Coalbrookdale (the Old Furnace, Enginuity and the Museum of Iron) are being asked if they would mind being included in this research.

Participation of the research will include permission for myself (the researcher) to observe educational visits to the site. As part of the ethical review process, a DBS check has been obtained and the fieldwork has been accepted by the University of Birmingham Ethics Review Panel. The researcher will be observing how educational staff and teachers use Ironbridge as a learning resource. There will be no questioning, individual tracking, student interviews or detailed questionnaires. Furthermore, there will be no pre- visit questioning, therefore no specific preparation work is required.

Secondly, a post visit interview with the lead member of staff from the visiting educational institution is desired. We plan for this to be undertaken within 10 days of the visit, at a time of your convenience through a method of your convenience (telephone, email or in person), to minimise disruption to you. This is a non-compulsory exercise; however, your participation would significantly enhance the research, and would allow for the capturing of the immediate responses to the experience of your visit to Ironbridge.

We would be very grateful, therefore, if you agree for your educational visit to be included in this research. Find a consent form attached- to be completed by the lead member of educational staff. The participation is voluntary and you are free to withdraw without giving any reason, up to one week before the scheduled observation and/or interview.

Can we thank you in advance for your help and co-operation in this research. Your thoughts are immensely valuable, and the participation of enormous importance.

Yours

James Gareth Davies

AHRC CDA Studentship Ironbridge International Institute for Cultural Heritage, University of Birmingham

Email: jgd475@bham.ac.uk

Research Supervisor: Professor Mike Robinson, Director, Ironbridge International Institute for Cultural Heritage, University of Birmingham, Telephone: Email:

Appendix 6: Lead Teacher Consent Form

Educational Visit Observation and Post Visit Interview Consent Form

Ironbridge Gorge World Heritage Site PhD research

James Gareth Davies- AHRC CDA Studentship

Ironbridge International Institute for Cultural Heritage, University of Birmingham

Ironbridge Gorge Museum Trust

This information is being collected as part of a research project concerned with formal education at the Ironbridge Gorge World Heritage Site led by James Gareth Davies from the Ironbridge International Institute for Cultural Heritage at the University of Birmingham. The information which you supply or which may be collected as part of this research project will be entered into a filling system or database and will only be accessed by authorised personnel involved in the project. The information will be retained by the University of Birmingham and will only be used for the purpose of research, statistical and audit purposes. By supplying this information you are consenting to the University storing your information for the purposes stated above. The information will be processed by the University of Birmingham in accordance with the provision of the Data Protection Act 1998. No identifiable personal data will be published.

<u>Statements of Understanding/Consent</u>

- I confirm that I have read and understand the participant information for this study. I have had the opportunity to ask questions if necessary and have had these answered satisfactorily.

- I confirm that I allow for the researcher to observe the educational visit for which I am the visit leader.

- I confirm that I allow for a post visit interview with the researcher to be undertaken.

- <u>I understand that participation is voluntary and that I am free to withdraw without giving any reason, up to one week before the observation and or interview.</u>

- <u>I understand that if I withdraw, my data will be removed from the study and will be destroyed.</u>

- I understand that the personal data will be processed for the purposes detailed above, in accordance with the Data Protection Act 1998.

- Based upon the above, I agree for my educational group to take part in this study.

Name of educational group representative:

Date: Signature:

Name of researcher:

Date: Signature:

A copy of the signed and dated consent form and any information about participation should be given to the participant and retained by the researcher to be kept securely on file

Research Supervisor: Professor Mike Robinson-Director, Ironbridge International Institute for Cultural Heritage

Telephone: Email:

January 2016

Appendix 7: Post Visit Interview Questions with lead members of staff from observed educational visits to the Ironbridge Gorge WHS (Coalbrookdale)

To be completed by the researcher:

Name:

Job title:

Contact Number:

Interview method: Telephone/ Email/ In Person

Name of educational institution:

Type of educational institution:

Date of visit:

Number of students:

Structure of the visit:

Structured Interview:

Visit Motivation

- What were the reasons for visiting Ironbridge with your pupils?

- Why did you choose to book this particular museum rather than any other? And this particular session?

- Was this the first time (that you are aware of) that your school has visited Ironbridge?

- Did you undertake any pre-visit or post-visit classroom work in relation to your visit to Ironbridge? If so, can you describe this?

- Ironbridge Gorge was inscribed as a World Heritage Site by UNESCO in 1986, in recognition of its Outstanding Universal Value. To what extent did the World Heritage inscription factor in your visit?

Visit Experience

- What role did the Ironbridge Gorge Museum Trust play within your visit?

- What activities do you feel were successful, and how so?

- What curriculum areas or themes did you address during your visit?

- How successful do you feel the field trip to Ironbridge was?

World Heritage

- Returning to Ironbridge as a World Heritage Site, how would you define World Heritage Values?

- To what extent do you feel that these World Heritage values was communicated during your visit? The international significance of Ironbridge through its Outstanding Universal Value.

- Can you name anyway that the Ironbridge Gorge Museums Trust assisted you in communicating World Heritage to your students?

- Do you believe that your students left knowing that Ironbridge Gorge is a World Heritage Site?

- Is it important that students know that Ironbridge is a World Heritage Site?

- Through their inscription, UNESCO hope that World Heritage sites will 'bring peace to the minds of men and women', through increase cultural understanding and tolerance and the recognition of a shared common humanity. Do you feel that your students left knowing this, if not why?

Future visit

- What curriculum areas or themes could you foresee a returning visit covering?

- How can you be better supported to communicate the World Heritage value to your students during a visit to Ironbridge?

- Do you have any other comments/ suggestions?

Appendix 8: Example of a transcribed post-visit interview

Name: ▢▢▢▢▢▢▢

Job title: Assistant Head teacher

Interview method: Telephone (23.06.16)

Name of educational institution: ▢▢▢▢▢▢▢▢. Primary school

Type of educational institution: Coeducational local authority maintained school

Date of visit: 15/06/2016

Number of students: 47 Year 6

Structure of the visit: Darby Houses, Old Furnace, Enginuity.

Transcript:

▢▢▢▢▢▢▢▢ and JD (Jamie Davies)

Interview starts

JD: First of all then, what was the visit motivation?

▢: Well, we have done prior trips there. It has been a 6 year trip for a number of years.

JD: If you could guess how many would it be?

▢ I would say about 15 years. It links obviously with our Victorian topic which we have studied in year 6.

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JD: In history?

■: Yes. So that is the reason really.

JD: That explains why you do particular sessions does it? Why you visit particular museums such as Blists Hill or why you do the particular workshops at Coalport and Jackfield then, yes?

■ Yes. As we do Victorians as a topic, obviously that is why we go to Blists Hill. We talk to them about the Industrial Revolution, so that's why the Coalbrookdale Museums are important. The Quaker houses because of Abraham Darby.

JD: What about any pre-visit activities, do you do any before the visit?

■: They do some English surrounding it. So they write a report about the industrial revolution. About what was life like before. We look at the Quaker family. Abraham Darby obviously in particular. Also what life was like for Quakers.

JD: You mentioned they had some of the material they saw on the trip. The family tree when we were in the Darby House.

■ That is from past trips. We have picked up bits and pieces that we think are relevant to our teaching in school. Lots of Quaker information we have found in books and online now. Again, the same with the Industrial Revolution.

JD: What about the post-visit stuff? What about after the trip? Did you do anything then?

■ We go more into the Victorian period. The Victorian Workhouse. We are going to look at an explanation about how iron was made. They will do some

explanatory writing about that. They are doing sewing samples and things in their art lessons.

JD: That was one of the things I was fascinated by, was the fact that during the course of the week, the Victorian theme carried on through. One of your colleagues mentioned that you tried to read, as there was no gadgets during the week. It was about spending time doing the embroiding or whatever it was, and reading a Victorian book, wasn't it?

Yes, we were reading Street Child. Yes, we try and keep it to how life would have been like.

JD: Do you think that the world heritage inscription was a factor in the visit?

No. Probably not.

JD: That's fine. Going back to the trust themselves then. What role did they play within the visit? I'm assuming, aside from the booking of the visit, can you name any ways they were helping out or crucial to the visit?

No. I think because the trip has been going for so long we are self-guided. We know don't need to ask for much information, as generally it is the same staff who come back each year.

JD: That's because you are repeat visitors, you know what to say and where to go?

Yes. I think so.

JD: What activities do you think were successful overall then?

█ Blists Hill is always a hit. They really loved Blists Hill. Enginuity – this time. They normally really like the Jackfield and Coalport activities, but this year, they weren't as taken by that. So for this year it was Enginuity and Blists Hill.

JD: Why do you think it didn't work with the workshops this year?

█ I don't know. I think the weather played a part with it. It was pouring with rain on the Tuesday, so I think we were trying to eke things out longer than they were needed. They got a bit bored. The Jackfield tile museum, there is only so much you can talk to them about tiles. I think we spent too long there.

JD: We have mentioned curriculum areas. It was history…

█: History. Art. English.

JD: So it is really cross curricular you would say?

█: Yes. Definitely.

JD: Do you think overall the trip was a success then?

█ Yes it was.

JD: Returning back to the World Heritage aspect of it. Can you remember anywhere that you saw it being communicated to you that it was a world heritage site? Or not?

█: At Blists Hill.

JD: How so?

█ I think it was on one of the walls on the way out. They have got a new entrance to Blists Hill. It wasn't there when I went there last. I was looking a bit

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more around closely. It might have been as you went in. But it did detail that it was a World Heritage Site. So it was the information on the wall explaining what that meant. That it was a place of significance and importance. I remember seeing it there. Probably because I have been so many times, I might have taken notice of it.

JD: What about at the Coalbrookdale sites?

▮: I don't remember it there. No. It might have been where the old furnace was. On the wall there.

JD: Do you think it is important that the students leave knowing it is a world heritage site then?

▮ I think we made more of a point about it before they came. We talked about the industrial revolution. In fact a lot of them thought it was just in Ironbridge and Coalbrookdale. We had to explain that the industrial revolution was across a much larger area, and Coalbrookdale was important in it. I think they probably had that knowledge before they came.

JD: So they did know the importance of it before they came. Part of that, is that UNESCO want to see, beyond the importance of the site being communicated, they want to see how it fits into the shared cultural heritage of humanity, peace and tolerance, and that sort of stuff. Do you feel like that is important for the students to know? How would that fit into a visit do you think?

▮ I think that is really important for the children to know. I don't think that it is particularly woven into our week.

JD: Do you think it is your role as a teacher to say that? Or do you think it is the role of the museum?

I think probably the teachers. Where we were sitting outside the furnace…for me the new peace… was new for me, so I did notice that. I suppose it is important for the teachers, but trying to weave peace…it is not what springs to mind when talking about the industrial revolution and that area. So yes, I suppose it is important for teachers to teach it, but I am not sure where I would fit it in, in terms of teaching them what they need to know before they go to Ironbridge.

JD: The other was thinking about future visits then. Would it be the same format and the same curriculum themes if you return again?

Yes it probably would be. I think, as I said, I would probably change things around, so we didn't spend so long in certain places. I think it is relevant to the curriculum as it stands.

JD: During the day, you did miss out the museum of iron, because they were having more fun, enjoying Enginuity more weren't they?

Yes.

JD: Do you think you just have to play it by ear?

The Museum of Iron, I dropped when I started the trip up a few years ago. Just because when I have been there with children, they just were not interested. There is not that much there for them to see. But some children obviously are interested in that. It is a matter of playing it by ear and working out. You want the children to have a good time and enjoy themselves. There is only so much learning they can take in, in a day.

JD: Do you think it is worth going to the Old Furnace?

Again, it was a quick visit. They weren't enamoured with that. So possibly not.

JD: What about the bridge? I know you said you did some sketching there.

I think the bridge is important. They kept saying on every bridge we crossed, is this the iron bridge? I think it was quite nice for them to see that because that is such a significant point.

JD: One of the things you picked upon was that Coalbrookdale sheet which you used. You said that was the first time you had come across that.

Yes. That was definitely helpful.

JD: You spent a lot of time using that to point out certain points to the students.

Yes. Which I wouldn't have done previously.

JD: Is that something that if you go back you would use again?

Definitely. I remember when we used to go in the Quaker houses, they used to show us around the houses. They have got far more knowledge than we have. I just did it by picking up the booklet in each room. I think anything that they can provide that helps teachers out…

JD: So if there was more guides at the furnace or at the house maybe?

Yes. I think that would be helpful.

JD: That is really useful as it is important to know what role the trust can play in visits. Have you got any other comments or suggestions?

No, other than that really, that it would be good. Everywhere we have been, apart from the Quaker houses, you have to check in, then you're off on your own. It would be handy to have a bit more involvement from people. There to highlight. I think children, when they have someone else there talking to them, they tend to listen more than if it was just their teacher. That would be quite handy.

Interview end

Appendix 9- Example of Observation field notes

Field Notes 21/04/2016

Thursday 21st April. ▨▨▨▨▨▨ High School, ▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨▨ is a mixed secondary school and

sixth form. ▨▨▨▨▨▨▨▨▨▨▨▨▨. Visiting Coalbrookdale for GCSE Controlled Assessment. 77 Year 10 students and 6 teachers

Time	Activity	Observation	Teacher Comment	Student Comment
10.34	Two buses arrive			
10:35	Lead teacher talking to the students on the buses **Students get off the buses with worksheets (16 page IGMT Student Pack-IGMT 2016) in hand.** Some go to the toilet. No pairing/queuing- **greater freedom**	What about?		
10:38	Students gathered in front of Museum of Iron Lead teacher goes in to register Students told to wait outside Students in peer groups talking	Another school group arrives in a minibus. Go straight to the fountain- with worksheets in hand.		One students says 'I've been here before'- earlier trip- with parents or primary school

10:42	Lead teacher returns and hands out group leader stickers (6 members of staff)			
10:43	Students told to divide into two groups based on what coach they were on. Then divide into groups based on their group teacher- 11-13 in each group			
10:44	In each group, name register is called out to make sure all students were present Lead teacher group observed – one student missing-in toilet			
10:47	Lead teacher and two other groups go into Museum of Iron (39 students?) Other groups go to the furnace and Darby Houses **Upon entry- lead teacher pointing out industrial process raw materials (Figure 1) - coke and pig iron. But students filing past given the limited space**	**Limited room in the Museum of Iron. Becomes a sea of students- tourists get swamped**		
10:48	Students gathered in the limited space of the first gallery (Figure 2) Introduction by the lead teacher Told not to mess about as it was a 'public venue', told to be courteous and to keep the noise down.	**Group too big in the limited space. Not all students able** to hear as some are talking and laughing and not paying attention for example about slag.		

Lead Teacher makes reference to the raw materials table (Figure 1) he had tried to point out to students. Asks what is needed to make iron- iron ore, lime stone, coke. **Lead teacher directs student's attention to the display (figure 2) he is standing in front of. Uses question and answers to keep students attention**- asks what comes out of the bottom of the furnace, why is it called a pig bay and pig iron. **Links to knowledge taught in the classroom and says 'it is actually written down here' (referring to the interpretation).** Compares pig iron to Cadbury's chocolate figures made of iron- make relatable. **Tells students- 'remember why we are here'. Notes that the museum will provide an insight into the industrial revolution, what went on in Coalbrookdale (jobs, live etc.). Not mention it's importance or WHS.** **Discusses the value of the visit as it forms the basis of a controlled assessment – with the nature of the essay to be completed**	**Lead teacher comments all drawn from the IGMT student pack questions- all memorized – very little additions/ deviation**		

	(comparison with other industrial cities-Bradford, Leeds, Manchester).			
10:52	Group goes upstairs into gallery (Figure 3) **Lead teacher tells the group to 'keep your wits about you' and encourages them to read the interpretation boards and take photographs with their phones to form the basis of contextual knowledge for the controlled assessment** Lead teacher introduces the gallery- the iron production before the Darbys. **Directs them to the interpretation- panels and models (Figure 3) to reaffirm and illustrate points. Names students who are next to the interpretation to locate and capture attention.** After lead teacher finishes talking and moves on to the next **'discussion area'- students follow and not read interpretation.** **Students stop to take photos with the manikin (slapping his bottom) (Figure 4a)** **Couple of students read the worksheets and**	Limited space **Not read interpretation- talking to peers** Folded worksheets		'How many more stairs'

read panels Others feel the coal as the walk past (Figure 4b)			
Standing in the mock-up of a Victorian classroom (Figure 6) **Lead teacher says he has never actually heard what the man on the video says because the students are always too loud.** **Lead teacher tells the students to read the panels in the gallery as it supports the worksheet and contextual knowledge – what it would have been like to live and work here** **Freedom** for students to look around the gallery Lead teacher going around peer groups pointing out objects/exhibits and asking questions Interactive exhibits popular (Figure 8b) Many walk past the giant model (Figure 8a)- one student does say- that's where we are. Others flicking through the information files. Lead teacher points out interpretation panels	Teachers less control- reading interpretation One student made a comment about the iron support pole	**Girls are you listening?- Teacher** **I can't hear- Student** **Lead teacher- If you get a chance look at that board. It talks about living in the area which will be useful for the essay.**	Figure 7- Student- 'I have found the iron bridge', another 'how will we walk across it', another 'it's a bit small', another 'is that what the iron bridge is going to look like'

	(Figure 8c) that are 'important for the essay'- have contextual information. Students go over and take photos, to save for when writing their essay. **Gathers students around two interpretation panels (Figure 8d). Point's information, images and tables that are important for them to include- students listen then take pictures. Questions and answers** based on the interpretation panels- national output, philanthropy – students told to look for buildings during the day which relate the philanthropy of the Darby's (national output=early philanthropy)			
11:10	Final gallery on the 1st floor Lead teacher uses space to explain that they are going up to the 2nd floor**- contextualises the museum galleries.** Explains that the first few rooms were about how iron was made, how the Darbys' changed this and that upstairs / second floor was about the Great Exhibition and the products that were made here. **Lead teacher explains that they had not**			'Look at that big fella'

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	covered this in secondary school, but that they may have in primary school. One student comment that it 'was a long time ago'. Students taking pictures of one painting (Figure 9) Some students read the image captions as they walk past			
	Enter the upstairs/ second floor gallery- straight to the naked statue (Figure 10a) and touch table (Figure 10b) **Half the group spends most the time at the touch table not looking at the other exhibits.** Lead teacher went over to the touch table to try and create a more meaningful learning experience rather than just 'playing' with the digital images. He used Figure 10c, to focus the student's attention (up to 12 around the touchtable). Some students (8) taking photos, reading the interpretation and making notes in the worksheet **(same ones throughout the visit)**		Lead teacher- don't go through there yet- **controlling the route and pace of the visit** (Devils in the detail gallery)	Students walking past the mirrors- the best thing in the mirror- me

11:17	Lead teacher moves through to the Devils in the Detail gallery Group now dispersed across 2nd floor galleries Lead teacher with a group of 8 giving a talk about philanthropy. **Text echo. Teacher reads and paraphrases**	Some students investigating the agas, putting their hands in the 'presses'?	**Have you tried lifting the saucepans**- lead teacher- Figure 11 Anyone got any of these? **Some students have the cast iron fireplaces and agas at home**	
11:21	Group goes downstairs Teachers call two boys who are **playing with the images from the touch table**	**No shop visit like the primary school observations** **No teachers taking photographs like the primary school observations**		
11:23	Outside Museum of Iron Walking over to the Darby Furnace Walking in peer groups		**Lead teacher asks about the furnace building- what is it?- 'old', 'renewed' Teacher- it is actually a world heritage site- but not to all of the group**	Students interest in the money in the bottom of the fountain- 'look at the money', 'let's get it from there'
11:25	Group gathered by the Fountain **Lead teacher directs attention to the Darby Furnace See that pyramid / triangle shape building,**	**Significance not discussed to whole group**		

	that is the most significant part of the site, real historical significance, well maintained and protected – does not tell the whole group that it is a world heritage site **Refers students to the model they saw in the museum of Iron and the information on their worksheets** **Lead teacher stands next to Figure 12- uses it to show the image of the waterwheel location not the red interpretation with what the site was like**			
11:27	Lead teacher reads the shifting worlds interpretation- **does not explain to the students**- boys laughing at the shape of the art whilst others throw pebbles into the waterwheel pit Inside teachers read interpretation Students look at the raw materials case- made a joke about slag- 'its you' Students walk around and on top of the furnace **No talk given**			

	Teacher asks Lead teacher about the relationship between the water wheel and the furnace			
11:36	Arrive outside the Darby houses Group split into 3 groups (15 in lead teachers group) Rosehill House and Dale House Tea Kettle Row Advised 10-15minutes in each location Lead teacher led Tea Kettle Row (where the workers would have lived) **Supposed to go to the Quaker Burial Ground- but finds out it was closed**			
11:40	Lead teacher group arrive outside **Tea Kettle row** (Figure 13) Told they were built for the workers Asks student to count how many doors there are- **discusses historic change-** buildings may have been knocked through. How to read buildings/ buildings analysis. **Says- can you accept it all (what you see today) as fact**		'These are private houses so don't make stupid noises'	

	Discussion based on common knowledge experience- the house of the teacher and student- both two up two downs- shared understanding of the layouts and floor plans Talks about historic change (windows) and listed buildings			
11:46	Group walks back down to the Darby Houses			
11:48	Lead teacher group goes into **Rosehill House** (Figure 14) Other group upstairs Lead teacher goes to tell the other 2 groups to swap around- **lead teacher leads the tea kettle row trips as only he knows about it** **Guide provides introduction to the group about the history of the building then lets them look around** **Only information is the a4 information** **Without teacher or volunteer guides the students don't stay long in each room- quickly moving on**			

	Not asking as many questions One student spots a hat and cane in the office and makes a joke about fifty shades of grey- volunteer doesn't here but responds as if it was a question			
11:53	Upstairs only four students in the rooms- asking questions to the guide, rest have **walked back downstairs – wandering through exhibits** (Quaker galleries)			
11:58	Half of the group in the downstairs corridor speaking to the guide Some making notes			
11:59	**Group waiting outside Dale House- another group still inside**			**Student asks where's the bin?**
12:01	Group sitting outside in the sun **Talking about the windows on the building (historic change) and what school lessons they are missing by being on the trip**		**Are you all seeing how you could use it? (the trip)** **One student: no** Teacher: There is more to come	
12:04	Group enter Dale house Old guide greets them and they all sit on chairs Guide asks: what have you come for? What questions have you got? **Student- reads out from resource pack: what**			**Student: I have lost my pack** Teacher: You need to find it

	is the focus of the exhibition in the Dale house? Guide then gave a talk about the Darby family, Quakers and the Darby women- the ladies of Dale House Only some students were making notes			
12:10	Talk ends and they go to the room next door then head outside			
12:13	Other 2 groups waiting outside. Lead teacher walks them down the hill for a tour of the village	**Students asking when lunch time would be** **Walking along the busy road, little pavement**		
12:15	**Arrive at the Boys school** (Figure 16) Lead teacher talks about philanthropy and the building (large windows cheaper)	**No interpretation**		**One boy asks what philanthropy is. Teacher been talking about it for the whole trip and the classroom**
12:19	**Arrive at Carpenters Row (Figure 17) Lead teacher standing on one side of the road, students on the other. Cars passing by- noisy. Visiting as they have not been renovated- proposes they are good to include to compare with tea kettle row.**	**Do not stop at the Mill (IGMT 2016b:10)-** How was the mill powered? How is it used now?		
12:23	**Stop at no.16 Wellington road house and the Grove Inn pub. Owners in the garden** gardening, ask the teacher where they are			

	from**. Students focused on the pet cats. Those at the back can't hear the lead teacher because of road traffic and students talking.**			
12:26	Cross road by the Methodist chapel to go up church road. **No road crossing.** Lead teacher points out the aga factory- 'the white roofs' – **they are still manufacturing here today**			
12:29	**Standing opposite charity/church row (figure 18). Lead teacher talk about comparison** with Carpenter Row- window replaced.			**People live here**
12:33	Walk to the back of the **Holy Trinity church to the Darby grave. Lead teacher says how the Darbys built a parish church like Titus Salt (didn't compare WHS)** Asks students to comment about the grave- Grave of Abraham Darby IV and his wife- not a Quaker grave – converted to the Church of England- **Figure 20**			**Student about the power plant- What's that? It looks like the thing in the Simpsons? Another student: it's a power plant**
12:39	**Arrive at the YHA Coalbrookdale (Figure 19). Gathers around the interpretation board.** Ask the students about the bricks- advertising purpose). Text echo as the teacher reads out from the text. **Encourages them to take a photo of the interpretation. Links the image to what they saw in the classroom.**			

12:42	Leave the YHA			
12:50	Arrive back at Coalbrookdale. Get lunch from the bus and eat it on the grass in front of the furnace by the fountain.			
13:20	Bus leaves Coalbrookdale			
13:55	Visit Ironbridge			
15:20	Got back			

Figures

Figure 1- Raw materials display, Museum of Iron

Figure 2- Display in the first gallery in the museum of Iron

Figure 3- Second gallery in the Museum of Iron

Figure 4a: Manikin

Figure 4b: Coal- real or not?

Figure 6- Mock up of a Victorian classroom with a video

Figure 7- Model of the Iron Bridge

Figure 8a

Figure 8b

Figure 8c

Figure 8d

Figure 9

Figure 10a

Figure 10b

Figure 10c

Figure 11

Figure 12

Figure 13

Figure 14

Figure 15

Figure 16

Figure 17- Carpenters Row

Figure 18- Charity/ Church Row

Figure 19-

Figure 20

Geography of the visit

Map of Coalbrookdale Museum of Iron and Old Furnace

1   Car Park
2   Toilets and Accessible Toilets
3   Entrance to the Museum of Iron
4 - 8   Museum of Iron, Exhibitions, Café, Shop and Toilets
9   Boy & Swan Fountain
10 -12   The Old Furnace
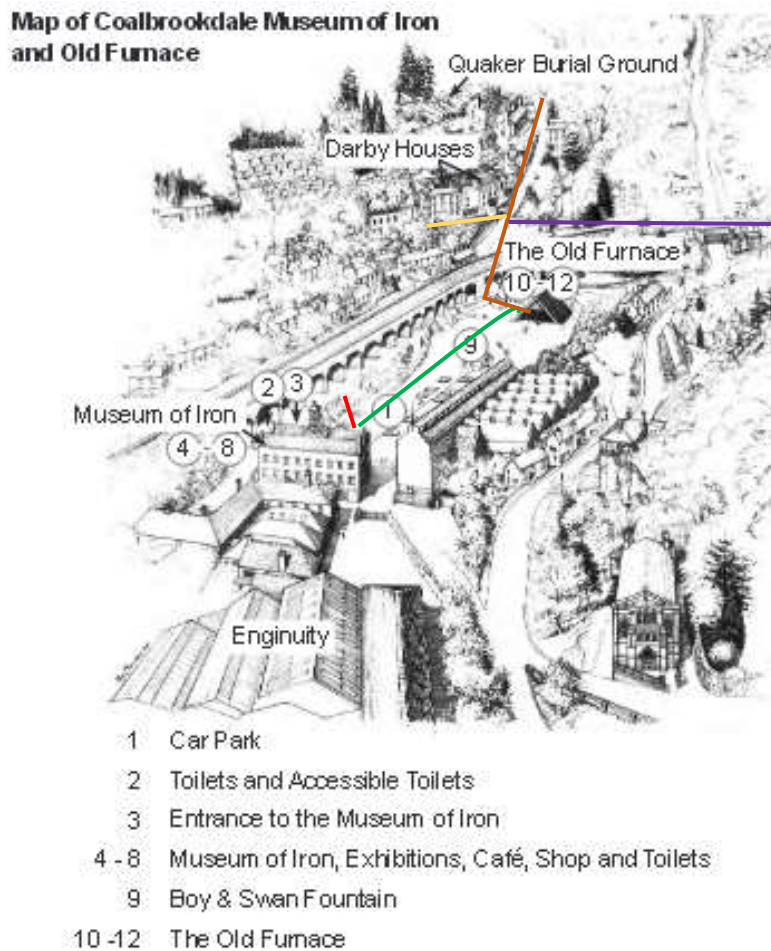
Source:

IGMT 2015d

Upon arrival at the bus carpark, the group organised itself in the carpark, then split into groups- divide by what bus they were on. Then registration in groups. Follow lead teacher's bus (3 groups). First go into the Museum of Iron (Red Line). Upon leaving the Museum of Iron, the group walked to the Furnace (Green line). The group then walked up to the Darby houses (Brown Line) where the 3 groups did simultaneous visits, swapping over. The lead teacher's group first walked up to Tea Kettle Row, then did Rosehill house then Dale House (Yellow Line). After

visiting all 3 sites, the three groups joined up and walked into the village for the

Coalbrookdale trail (Purple line).
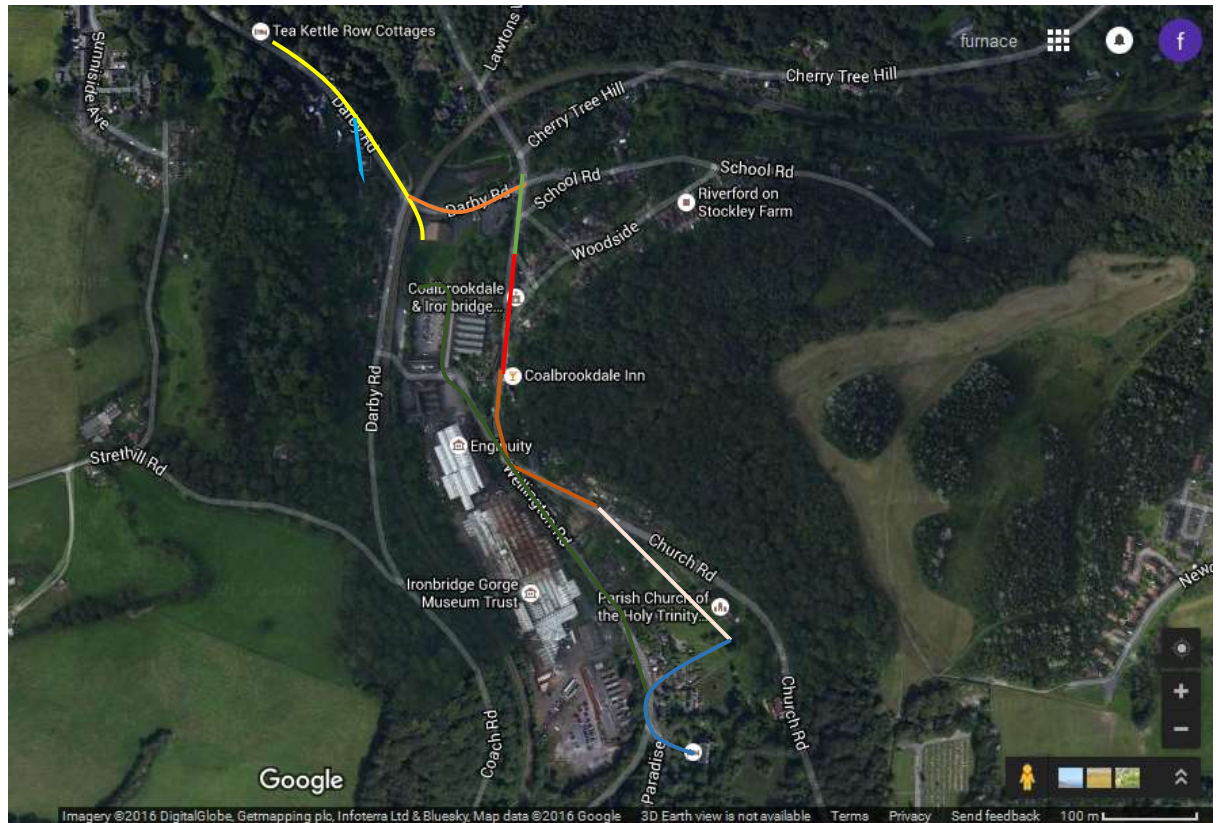
From the furnace the observed group then walked up to the Darby houses where the 3 groups did simultaneous visits, swapping over. The lead teacher's group first walked up to Tea Kettle Row (Yellow Line), then did Rosehill house then Dale House (Blue Line). After visiting all 3 sites, the three groups joined up and walked into the village for the Coalbrookdale trail (Orange line). The group first stopped at the School House (Orange Line), followed by Carpenters Row (Light Green line), then the Grove Inn (Red Line). The Group then crossed the road and walked to Charity Row (Brown line), then walked to the Darby Grave at the church (Pink Line), before walking down to the YHA Coalbrookdale/Institute (Blue line). The group then walked back to the Museum of Iron/Buses to get lunch on the grass by the fountain.

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Appendix 10- Research datasets summary

Table 4 –Fieldwork Dataset Audit			
Field Notes		14.03.16 (2117 words) 16.03.16 (3840) 12.04.16 (3557) 21.04.16 (2801) 27.04.16 (3747) 07.06.16 (3193) 09.06.16 (3907) 10.06.16 (2718) 13.06.16 (3321) 14.06.16 (2816) 15.06.16 (3867) 20.16.16 (1248) 23.06.16 (534) 24.06.16 (1763)	
	Time Allocation (Excel)	14 entries	
	Geography of the visit	14 maps	
Post Visit Interviews	Audio	14.03.16a (00:09:02) 14.03.16b (00:00:21) 16.03.16 (00:11:19) 12.04.16 (00:31:01) 27.04.16 (00:23:05) 07.06.16a (00:02:54) 07.06.16b (00:25:25) 09/10.06.16 (00:14:59) 14.06.16 (00:09:13) 15.06.16 (00:11:02) 20.16.16 (00:10:49) 23.06.16 (00:04:51) 24.06.16 (00:10:39)	
	Transcripts	14.03.16a and 14.03.16b (1346) 16.03.16 (1762) *17.03.16-* (1344) 12.04.16 (4599) *21.04.16 (1928)* 27.04.16 (3060) 07.06.16 (3635) 09/10.06.16 (2488) 14.06.16 (1445) 15.06.16 (1747) 20.16.16 (1810) 23.06.16 (*952)*	

		24.06.16 (1584)	
Interviews (Staff)	Audio	29.01.16 (00:46.11) 20.06.16a (00:08:41) 20.06.16b (00:10:24) 20.06.16c (00:12:11) 20.06.16d (00:07:36)	
	Transcript	29.01.16 (6078) 20.06.16a (1626) 20.06.16b (1632) 20.06.16c (2058) 20.06.16d (1294)	
Documents	Visit Resources	Staff notes ▓▓▓▓ ▓▓▓▓ - 17.03.16 (1029/3 pages) ▓▓▓▓▓▓▓▓▓▓▓ 17.03.16 (2 pages) Year 9 ▓▓▓▓ ▓▓▓ visit to Ironbridge 6th-8th June 2016. (07.06.16).Briefing for students.(1370/5 pages) ▓▓▓▓▓▓▓▓▓Year 9 visit to Ironbridge. 6th-8th June. (07.06.16).Assignments and Site notes (2093/16 pages) ▓▓▓▓▓▓ ▓▓▓▓▓▓▓ GCSE History Coursework 2016/17. (27.04.16) (496/5 pages) Past example-▓▓▓ ▓▓▓▓▓▓▓▓▓ ▓▓▓▓ GCSE History Coursework 2015/16 (608/6 pages) ▓▓▓▓▓▓▓ Ironbridge Trip. Year 7 Telford Trip. DT/SF 2016. (09-10.06.16)	

		(2314/20 pages)	
		▨▨▨▨▨▨▨ GCSE Controlled Assessment Pack (21.04.16). IGMT. Coalbrookdale Assignment History Around Us Objective 2 and 3 Teacher's Guide/ Student Visit Pack/ Source Pack "The Darby family cared about its workers between 1700 and 1860". (76 Pages)	
		Enginuity School Challenge Sheet (14.03.16)	
		▨▨▨▨▨▨ (13.06.16)	
		▨▨▨▨▨ Enginuity Worksheet (14.06.16)	
		Coalbrookdale Trail. IGMT. Used by ▨▨▨▨ ▨▨▨▨ (15.06.16) and ▨▨▨▨▨▨ (24.06.16)	
	Focus of the visit excel table and graph (2016 IGMT Booking Forms)	55 data entries and graph	
Photographs	Author	268	
	School	22	
Analysis	GIS Map		

Fieldwork Datasets

- Dataset 1: Semi Structured Interview with ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚, Head of Learning at IGMT. 29/01/2016

- Dataset 2: ⬚⬚⬚⬚⬚⬚⬚⬚⬚. Front of house Assistant. Darby House- Rosehill House. 20/06/16.

- Dataset 3: ⬚⬚⬚⬚⬚⬚⬚. Senior Presenter- Enginuity. 20/06/2016.

- Dataset 4: ⬚⬚⬚⬚⬚⬚⬚⬚. Front of House Assistant. Enginuity. 20/06/2016.

- Dataset 5: ⬚⬚⬚⬚⬚⬚. Front of House Assistant. Museum of Iron. 20/06/2016.

- Dataset 6: ⬚⬚⬚⬚⬚⬚⬚⬚⬚. Date of visit: 14/03/2016. Interview method: Telephone (28.04.2016)

- Dataset 7: ⬚⬚⬚⬚⬚⬚⬚. Date of visit: 16/03/2016. Interview method: Telephone (22.04.16)

- Dataset 8: ⬚⬚⬚⬚⬚. Date of visit: 17th March 2016. Email: 08/06/16

- Dataset 9: ⬚⬚⬚⬚⬚⬚. Date of visit: 12.04.16. Telephone 18/04/2016.

- Dataset 10: ⬚⬚⬚⬚⬚⬚. 21/04/16. Email 21.04.2016.

- Dataset 11: ⬚⬚⬚⬚⬚⬚⬚. 27.04.16. Telephone- 06/05/16.

- Dataset 12: ⬚⬚⬚⬚⬚⬚⬚. 07/06/16. Telephone. 16/06/16

- Dataset 13: ⬚⬚⬚⬚⬚⬚⬚⬚⬚. 09-10/06/16. Telephone. 17/06/16.

- Dataset 14: ⬚⬚⬚⬚⬚⬚. 13/06/2016. Telephone. 11/07/16.

- Dataset 15- ⬚⬚⬚⬚⬚⬚⬚. 14/06/2016. Telephone. 25/06/16

- Dataset 16 – ⬚⬚⬚⬚⬚⬚. 15/06/16. Telephone. 23/06/16.

- Dataset 17: ⬚⬚⬚⬚⬚⬚. 20/06/16. Email. 25/06/16

- Dataset 18: ▆▆▆▆▆▆▆▆. 23/06/16. Telephone and email. 06/07/16

- Dataset 19- ▆▆▆▆▆▆▆▆. 24/06/16. Telephone. 30/06/16

- Dataset 20: Field notes from the observation of ▆▆▆▆ Primary School (Year 5). Monday March 14th 2016. Enginuity.

- Dataset 21: Field notes from the observation of ▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆▆ (Year 6). Wednesday March 16th 2016. Enginuity and Blists Hill.

- Dataset 22: Field notes from the observation of ▆▆▆▆▆▆▆ (Year 5). Thursday 12th April 2016. Enginuity, Archives, Darby Houses, Coalport.

- Dataset 23: Field notes from the observation of ▆▆▆▆▆▆▆ (Year 10). Thursday 21st April 2016. Museum of Iron, Old Furnace, Darby Houses, Coalbrookdale.

- Dataset 24: Field notes from the observation of ▆▆▆▆▆▆▆▆▆ (Year 10). Wednesday 27th April 2016. Coalbrookdale, Darby Houses, Museum of Iron, Old Furnace.

- Dataset 25: Field notes from the observation of ▆▆▆▆▆▆▆▆ (Year 9). Tuesday June 7th 2016. Museum of Iron, Old Furnace, Darby Houses, Coalbrookdale.

- Dataset 26: Field notes from the observation of ▆▆▆▆▆▆▆ (Year 7). Thursday June 9th 2016. Enginuity, Darby Houses, Museum of Iron.

- Dataset 27: Field notes from the observation of ▆▆▆▆▆▆▆ (Year 7). Friday June 10th 2016. Jackfield.

- Dataset 28: Field notes from the observation of ▓▓▓▓▓▓▓▓

  ▓▓▓▓ (Year 7). Monday June 13th 2016. Old Furnace, Museum of Iron,

  Darby Houses.

- Dataset 29: Field notes from the observation of ▓▓▓▓▓▓▓▓

  ▓▓▓▓ (Year 4). Tuesday June 14th 2016. Enginuity.

- Dataset 30: Field notes from the observation of ▓▓▓▓▓▓▓▓▓

  ▓▓▓ (Year 6). Wednesday June 15th 2016. Old Furnace, Darby Houses,

  Enginuity.

- Dataset 31: Field notes from the observation of ▓▓▓▓▓▓ (Year 7).

  Monday June 20th 2016. Enginuity.

- Dataset 32: Field notes from the observation of ▓▓▓▓▓▓ (Year ?).

  Thursday June 23rd 2016. Enginuity.

- Dataset 33: Field notes from the observation of ▓▓▓▓▓▓▓▓

  ▓▓▓ (Year 5). Friday June 24th 2016. Museum of Iron and Enginuity.

Coding Themes

Old Furnace

Iron Bridge- experience and awareness

Darby Houses

Enginuity

Coalbrookdale

Weather

Time Pressures

Reason for visiting- including WH a factor?

Pedagogical style/Learning process- hands on (students and teachers), use of imagination, role of photography, personal experience, competition, text echo, structured play, analogies

Worksheets

Pedagogical content- curriculum link, Victorians, History, Science, cross curricular

Learning Outside of the Classroom

Free choice within the learning experience

Modelling

Student Attention

Learning setting – formal v informal

Teacher Confidence

Repeat Visits

Communication of WH-Experience/ Mechanisms – Museum of the Gorge video, signage, guides

Communication of WH-importance, factors- age, curriculum focus, locality

Who should communicate WH- teacher, guide, site (interpretation, activity)

Failure to communicate WH

Role of teachers

Teacher Agency

Parallel learning experiences

Intended v Actual use

Tension between visitor groups

Popular learning experiences

Appendix 11: Fieldwork summary tables from Post-visit and observation datasets

Table 1- Summary of Visit Experience section responses from the post-visit interviews with lead teachers

Table 2: Visit Motivation section responses from post-visit interviews lead teachers

Table 3: Summary of future visit section responses from post-visit interviews with lead teachers

Table 4: Summary of responses from lead teachers relating to the World Heritage section of interview questions

Table 5: Summary table of observed schools during visit to the Ironbridge Gorge WHS

Table 1- Summary of Visit Experience section responses from the Post-Visit Interviews with lead teachers				
Date of Visit	IGMT Role	Successful activities	Curriculum areas/ themes	Successful trip
14.03.16	Pre-visit-take booking	All- show, hands on museum-Enginuity	Science- Materials and Structures	Yes
16.03.16	Within the museum-overview	Enginuity and Blists Hill- hands on, interaction	History- Victorians Literacy Design and technology PSHE	Yes
12.04.2016	Pretty good	Blists Hill Candle making Brick making usually Hands on Roleplay- Policeman	History- Victorians Art Geography- rivers- river Severn	Yes
21.04.2016	Facilitate, organise, volunteer knowledge	Physical remains referred to in coursework essays	History, Sociology (Philanthropy), RE (Quakers)	Yes
27.04.2016	Pre-visit and provision of the GCSE Controlled assessment resources, Booking, Volunteers	Darby Houses Museum of iron less so Coalbrookdale sites: Carpenters row, charity row Blast furnace less so	GCSE History	Yes
07/06/16	Booking- 'engineer the whole trip' Rotational basis	Museum of Iron Old Furnace Darby Houses Casting- Blists Hill The merry-go-around- Blists Hill Talking to the workers- Blists Hill Past years- Craven Dunnill Factory	Design and Technology Cross Curricular RE	Yes

09/06/16 and 10/06/16	Booking Tour Guides in the Darby Houses Teachers in Enginuity	Enginuity Buggy Workshop Jackfield Tile Workshop Darby Houses Blists Hill	Design and Technology Science Chemistry History Geography Cross curricular	Yes
13/06/16	Guides in the Darby Houses	Enginuity Blists Hill Darby Houses	History- Victorians PSHE	Yes
14/06/16	Booking Deliver the workshop	Jitterbug workshop Hands on exhibits Water exhibit Scan it machines	Science Electricity History Geography	Yes
15/06/16	No- repeat visitors- self-guided	Blists Hill Enginuity	History Art English Cross-Curricular	Yes
20/06/16	Organised / Booking Workshops set up and run by	Buggies and Boat Workshop	Science and Technology	Yes
23/06/16	Unsure	Pull the train and climbing robots in Enginuity	Geography – design of towns and topography of surrounding area. British values Science – blast furnace Properties of metals	Yes
24/06/16	Self-guided Coalport China Museum- guide introduction	Enginuity Jackfield Tile Museum	History- Victorians Geography Cross Curricular Art	Yes

	Jackfield Tile Museum		
▰▰▰▰ ▰▰	Preliminary visit Greeting upon arrival Volunteers at the Darby houses answering students questions	All- students enjoyed, supported a wide variety of curriculum areas	Topic- Inventions Science – Electricity English – Use of adjectives History – Impact of industry RE (SMSC) – Discusses Quakers, respecting others beliefs PSHE – Lifestyle leisure time and links with health.	Yes

Table 2:Visit Motivation section responses from post-visit interviews lead teachers						
Date of Visit	Reason for visiting	First visit	Activities	Pre visit	Post visit	WHS factor
14.03.16	Locality to the residential Budget, curriculum link	Yes	Enginuity- Materials and Structures interactive show	No Materials and Structures in Science Two teachers month before pre-visit	No	No
16.03.2016	Historical- consolidate year 5 Victorians (History)	No-18 years	Enginuity and Blists Hill- hands on, interaction	Yes- recap Victorians (Year 5) and science and Design and technology and introduce the museum	Yes- literacy and history. Debates, Recounts, posters, leaflets- form basis for school and parent assembly	No
12.04.2016	Historical Year 5- Victorians (History)	No- 11-20 years	Blists Hill- immerse in Victorian times Pottery workshop- hands on, art, living working place	Use of history resources	Not usually- time pressure, excluding those who didn't visit This time- Recount exercise	No
21.04.2016	GCSE Controlled Assessment resource Historical- familiarity and knowledge, resources and local	No	Physical remains as a resource	No (Mention Classroom on trip)	No	No
27.04.2016	GCSE Coursework	No- 2009	Museum of Iron Rosehill and Dale	Brief introductory lesson	Follow up lessons based on the trip (using worksheet)	No

	study site		House Coalbrookdale sites		and lesson themes to answer the coursework question: significance of Coalbrookdale, Darby Family, Coalbrookdale company, Quakers, Philanthropy, critique working and living conditions using the source pack	
07/06/16	To experience the birthplace of the industrial revolution, to enjoy a famous world heritage site, to facilitate active research for our Ironbridge enterprise project and our individual research project.	No-12 years	Museum of Iron Enginuity- Marketing Presentation Blists Hill- Casting Jackfield Tile Museum- tile decoration Coalport China Museum- mug and intaglio	Given visit work booklet and independent work project brief Pre visit briefing with students and parents (separate) PowerPoint about the trip	Independent Work Project Enterprise/Design and Technology Project	No

09/06/16 and 10/06/16	A science, design and technology trip. look at the area, get a bit of DT in, get the science in and of course the obvious links being ingenuity and the work of some clever inventors at the time	15 years or more	Enginuity Buggy workshop Jackfield Tile decoration workshop (Used to do the Museum of the Gorge and Coalport China Museum)	Museum of the Gorge video Couple of assemblies Tile design homework DT class activities	Assembly- give out prizes including best booklet	No
13/06/16	Victorians (History)	Over 20 years	Enginuity Blists Hill Darby Houses	Classroom- Victorians	Classroom- Victorians	No
14/06/16	Jitterbug Electricity topic Chance to visit museum	4 or 5 years	Enginuity Jitterbug Workshop	Last year –staff visit to create the worksheet	Enginuity-Persuasive Leaflet Classroom- Electricity, Circuit Diagrams	No- more practical issues
15/06/16	History Victorian topic	15 Years	We do Victorians as a topic, obviously that is why we go to Blists Hill. We	English- write a report about the industrial revolution. In classroom-	Classroom- Victorian period- the Victorian Workhouse and How iron made- Explanatory writing	No

			talk to them about the Industrial Revolution, so that's why the Coalbrookdale Museums are important. The Quaker houses because of Abraham Darby.	Quakers, Abraham Darby	Art- Sewing Samples	
20/06/16	Annual enrichment week- non curricula activities	10 years	Day visit structure, local STEM related	Not needed	Not really	No
23/06/16	To give our students a taste of the Victorian period in time.	Yes	compare and contrast the innovations of the Victorians with today's	No	No	No
24/06/16	Victorians (History) in Year 5. It was a starting point for our topic.	15 years	Museum of Iron Enginuity- hands on, fun, nice finishing museum Jackfield Tile Museum- decorate a tile Toll House Coalport China Museum- decorate a mug	Lead teacher first visit- pre visit at half term History of the iron bridge Geography- navigational exercise Victorians- fact file	Three diary entries (during visit) Recount Classwork- Victorians and the surrounding area	Yes

| | Topic work on inventions-bridge design project | Yes | 'short sharp activities'- travelling time and to keep students interested Enginuity- topic of inventions and science unit of electricity Explore independently Competitive element

Iron Bridge- historical relevance, design and make a bridge activity

Museum of the Gorge- significance of the gorge, change over time

Walking between Museum of the Gorge and the Iron Bridge- discuss health

Darby Houses- experience past | Yes- lead teacher brought family at the weekend

Enginuity Museum of Iron- exhibits were dated and not very interactive Walked from Enginuity to Darby Houses Darby Houses closed- access would have enabled preparation of word banks Iron Bridge- walking to assess health and safety Museum of Gorge | A review of the trip in English with a focus on using adjectives to describe features of Darby House.

Technology challenge- build a bridge out of cocktail sticks and midget gems that could hold the weight of a toy car and cross a river (20cm wide) without touching the water. | Didn't at first- compared to the other wonders of the world stressed its significance Did not know Old Furnace was part of the WHS |
|---|---|---|---|---|---|---|

			life, enjoy dressing up, using adjectives/adjective phrases the describe different features, ask questions and discuss objects purpose			

Table 3:Summary of future visit section responses from post-visit interviews with lead teachers		
Date of Visit	Future visit curriculum themes	Better support WHS communication
14.03.16	Science	Not relevant
16.03.16	History- Victorians Design and technology Same because it is a residential trip	Introductory talk, Displays at both sites, Introductory film about World Heritage like that at Blists Hill from a young person's perspective, pre-visit resource, role of teachers. Values- online resource or onsite
12.04.2016	Geography- River Severn Moral values	Introductory talk- start of residential/ visit= perhaps at the museum of the gorge
21.04.2016	Not returning due to curriculum change	Specific multimedia around the furnace
27.04.2016	GCSE History Schools History Project	Present wider context – other industrial revolution developments and figures locally and nationally and their contribution/significance Present more information about the workers (Acknowledge role of Blists Hill)- suggests interpretation at workers housing such as Carpenters Row
07/06/16	Design and Technology project Cross curricular	Teachers role to communicate Need to be more blatant YHA and other centres in communicating human values
09/06/16 and 10/06/16	Same- science, design and technology. Cross curriculum.	Model of the Old Furnace Tour guides
13/06/16	Same- Victorians	Guides
14/06/16	Same- science	Giditron
15/06/16	Same- History, English, Science	Coalbrookdale Trail Sheet Guides- Darby Houses, Old Furnace
20/06/16	Same again- science and technology	More time (not given the way trip structured)- looked at furnaces
23/06/16	Citizenship – about civil rights. Maths – plotting conversion tables for the currency. Art – Could be covered in many ways.	On a personal level I would need to go to the website to find out more about what the status entails.

24/06/16	Same Tar Tunnel and Glass Workshop at Coalport China Museum	No
▭ ▭	Same Topic- Inventions Science – Electricity English – Use of adjectives History – Impact of industry RE (SMSC) – Discusses Quakers, respecting others beliefs PSHE – Lifestyle leisure time and links with health.	Access to the Darby house to support the development of resources Linking the World Heritage Value into the curriculum areas.

Date of Visit	Define World Heritage Values	Communication of World Heritage Values	Students left knowing WHS	Important to know that it is a WHS	Important to know human values
		Table 4: Summary of responses from lead teachers relating to the World Heritage section of interview questions			
14.03.16	Don't know. Similar to the National trust. Looking after the valuable sites of history.	No	No	Yes	Yes
16.03.16	unique sites, that aren't anywhere else. So it has special values	Not really- display boards	Some	Yes	Yes- link to British Values
12.04.2016	A real importance and has had a real impact on the lives of the people where it is an on the world in fact. Which Ironbridge to me, the iron making, how it was exported and the impacts further afield than just there.	Wouldn't even of known Eyes were all on the children	No	Yes	Yes
21.04.2016	Having played a major contribution to the development of human history, the furnace and gorge is to be appreciated and protected.	The status of the site is not as apparent as it could be. Information boards and logos	Some	Yes but not crucial	No
27.04.2016	N/A	'We've communicated it and that will be part of our	Yes	Yes	No- not really our focus

		teaching' Guide in Dale House			
07/06/16	N/A	Museum of the Gorge Video Plaques at Blists Hill I didn't put it across as well as I should have. – onus on the teachers	I didn't put it across as well as I should have.	Yes	Yes
09/06/16 and 10/06/16	Site of special cultural significance	Museum of the gorge visit- previsit video in school only - I don't think it was to be honest. No.	Yes	Yes	Yes- Victorian values
13/06/16	N/A – wonders of the world	No	No- world wonders	Yes	Yes
14/06/16	N/A	No	Yes	No	No
15/06/16	N/A	Blists Hill- on the wall Old Furnace- maybe on the wall	Yes	Yes	Yes
20/06/16	N/A	No - Not relevant to our visit/ year 7 Lead teacher on coach explained about the Old Furnace – 'that they should come back and find out more another time)	No	No	No – not for science/year 7
23/06/16	N/A	No- it clearly has great value but I was unaware of the status	No	No	To a degree- as they could see a lot of inequalities at the time especially towards women and children. Which to them was a little shocking.
24/06/16	N/A	Coalport China Museum workshop introduction	Yes	No- for older children	No- for older children
	N/A	Museum of the Gorge- video Darby Houses	Most of them	Our trip no Looking at the big	No- not a learning goal for our trip

| | | Pointing out the world heritage signs
Fast pace of the planned activities- not one of our learning goals | | picture, being proud of where they come from, understanding the significance of the iron bridge- yes | |

Date	School	School	Type	Age	No. students	Observed	Visited	Residential	World Heritage Mentioned	Resources

Table 5: Summary of observed schools during visit to the Ironbridge Gorge WHS

Date	School	School	Type	Age	No. students	Observed	Visited	Residential	World Heritage Mentioned	Resources
14/3		Primary	Coeducational community school	Year 5 (9-19) KS2	58	Enginuity	Not the Old Furnace or the Iron Bridge	Yes	In show mentioned the bridge	Enginuity Challenge Worksheet
16/3		Primary	Catholic Church of England primary school	Year 6 (10-11) KS2	44	Enginuity, Blists Hill	Not the Old Furnace or the Iron Bridge	Yes	No	No Post visit activities
12/4		Primary	Local authority maintained coeducational school	Year 5 (9-10) KS2	57	Enginuity, Archives, Rosehill (Darby House), Coalport	Tar Tunnel Blists Hill Iron Bridge Not the Old Furnace	Yes	No	No Post Visit- Recount
21/4		Secondary	Secondary Comprehensive/ Foundation Trust	Year 10 (14-15) KS4	77	Museum of Iron, Old Furnace, Rosehill and Dale House, Tea Kettle Row, Boys School, Carpenters Row, Church Row, Darby	Iron Bridge	No	Yes (not to the whole group)	Yes- Controlled Assessment resource pack

					Grave, YHA Coalbrookdale (Literary and Scientific Institute)					
27/04	▓▓▓▓	Secondary	Secondary specialist technology college	Year 10 (14-15) KS4	106 (52 on 27/4)	Grove Inn, Carpenters Row, Boys School, Rosehill House, Dale House, Tea Kettle Row, Museum of Iron, Charity Row, Church	Iron Bridge	No	Yes	Yes- adapted Controlled Assessment Pack
07/06	▓▓▓▓	Secondary	Selective Girls Grammar School	Year 9 (13-14) KS3	151	Museum of Iron, Old Furnace, Rosehill and Dale House, Darby Watercourses, Carpenters Row.	Coalport China Museum Jackfield tile museum Iron Bridge, Enginuity (presentation) Blists Hill	Yes	No	School developed booklet/worksheet for assignments including best annotated booklet
09/06	▓▓▓▓	Secondary	coeducational secondary school with	Year 7 (11-	36	Enginuity and Buggy Workshop,	Iron bridge Coalport Blists Hill	Yes	No	Yes- school developed

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				12) KS3		Darby Houses, Museum of Iron.			
10/06		Secondary	coeducational secondary school with academy status	Year 7 (11-12) KS3	36	Jackfield Tile Museum and Tile Decoration workshop	N/A	Yes	No	Yes- school developed
13/06		Primary	Church of England primary school	Year 6 (10-11) KS2	31?	Old Furnace Museum of Iron Darby Houses	Blists Hill Enginuity Jackfield Tile Museum Iron Bridge Museum of the gorge	Yes	No	Yes- school developed
14/06		Primary	foundation primary school considering an academy conversion	Year 4 (8-9) KS2	60	Enginuity Machines and Robots Workshop	N/A	No	No	Yes- school developed
15/06		Primary	coeducational local authority maintained school	Year 6 (10-11) KS2	46-48	Darby Houses Old Furnace Enginuity Museum of Iron (supposed to do)	Coalport Jackfield Blists Hill Iron Bridge	Yes	No	Coalbrookdale Trail Sheet (only for teachers)
20/06		Secondary	secondary school with academy	Year 7 (11-	41 (100) Split over two days	Enginuity- Buggies and Boats	Cosford Museum and rocket	No	No	No

			status	12) KS3		workshop	workshop			
23/06		Primary	coeducational independent/ private school	Year 5 (9-10) KS2	6	Enginuity	Cadburys World	Yes	No	No
24/06		Primary	local authority maintained coeducational school	Year 5 (9-10) KS2	26	Museum of Iron Enginuity	Iron Bridge Museum of the Gorge Jackfield Tile Museum Coalport China Museum	Yes	No	Notebooks Teachers-Coalbrookdale Trail
14th March 2016		Primary	Church of England School	Years 3 (7-8) and 5 (9-10) KS2	88	No	Enginuity Dale and Rosehill Houses Iron Bridge Museum of the Gorge	No	Yes	Enginuity Team challenge sheets which link into Design and our Topic of Inventions. Darby Houses-dress up in period costume and literacy exercise . Iron bridge-art skills and supports post visit design challenge next week. Museum of the gorge – writing exercise about the Gorge.

Appendix 12: Email from Christina Janse van Rensburg, Department for Education

Sent: 31 January 2017 11:04

Subject: Department for Education:

Dear Mr. Davies,

Thank you for your email of 11th January requesting information about World Heritage Education. I am responding as I work in the curriculum division.

World Heritage does not feature within the formal curriculum in England. Instead, the transmission of World Heritage values is undertaken by a variety of educational and participatory programmes across the UK's 30 World Heritage Sites. The management team at each of the UK's World Heritage Sites is generally best placed to educate and engage the public on their site's Outstanding Universal Value, both online and via lectures and tours. Educational visits such as those you observed at Ironbridge Gorge form a key part of transmitting this understanding to the next generation. And the Jurassic Coast World Heritage Site management team won the 2016 Royal Geographical Society Award in recognition of its excellence in teaching and public engagement to foster student and wider public engagement with the Jurassic Coast WHS.

You may be interested to know that the department is investing £817,520 in 2017-18 in the Heritage Schools programme delivered by Historic England. The Programme aims to ensure that schoolchildren develop an understanding of their local heritage and its significance so that children grow up with a sense of real pride in their local area founded on a deep understanding of its heritage and its place in the national story. Historic England is working with schools in selected areas across England, such as Bristol, Barking and Dagenham and Great Yarmouth, to help them to make effective use of their local historic environment to bring the curriculum alive and to engage pupils.

The programme provides continuing professional development to support teachers in the design and delivery of the curriculum by ensuring they understand the opportunities and potential of their local historic environment for delivering an engaging curriculum.

As part of our commitment to improving the service we provide to our customers, we are interested in hearing your views and would welcome your comments via our website at: https://www.education.gov.uk/pcusurvey.

Yours sincerely

Christina Janse van Rensburg

Web: https://www.education.gov.uk

Twitter: https://www.twitter.com/educationgovuk

Facebook: https://www.facebook.com/educationgovuk

Department
for Education

References

Acheson, C. Forthcoming. *Communicating World Heritage Values: World Heritage Tourism*. Ironbridge International Institute for Cultural Heritage, University of Birmingham. Unpublished PhD Thesis.

Adie, B A. Hall, C M and Prayag, G. 2017. World Heritage as a placebo brand: a comparative analysis of three sites and marketing implications. *Journal of Sustainable Tourism*. P1-17.

Aerila,J.,Rönkkö, M. and Grönman,S.2016. Field Trip to a Historic House Museum with Pre-schoolers: Stories and Crafts as Tools for Cultural Heritage Education. *Visitor Studies*. 19:2, 144-155.

AIM. 2013*. Joint letter to the Secretary of State for Education. Re: Proposed new History National Curriculum.* From Association of Independent Museums, the National Museums Directors Conference, the British Army Museums, and the Museums Association. Available from: http://www.nationalmuseums.org.uk/media/documents/images/nmdc_history_curriculum_consult ation_response_16_april_2013.pdf .Accessed 05/06/2015

Albert, M. 2013. The Global Strategy of World Heritage–Challenges and Weaknesses of the 5 C's. In BG Jansson (Editor). *The Significance of World Heritage: Origins, Management, Consequences. The Future of the World Heritage Convention in a Nordic Perspective*. Papers Presented at Two Conferences in Falun (Sweden) 2010 and in Vasa (Finland) 2011. Dalarna University WHILD Report NR 2013:1. Pages 7-26. Available from: http://www.diva-portal.org/smash/get/diva2:612266/FULLTEXT01.pdf .Accessed 10/03/2015

Albert, M and Ringbeck, B. 2015. *40 years World Heritage Convention: Popularising the Protection of Cultural and Natural heritage*. De Gruyter.

Allard, M. 1995. The evaluation of museum-school programmes: the case of historic sites. In E Hooper-Greenhill (ed.), *Museum, media, message.* Routledge. London and New York, pp. 235–44.

Allen, I. 2003. Editorial: Museum sector must head lessons to ensure its continued success. *The Architect's Journal*. 218 (3).

Alton, G.1987. *Exploring Coalbrookdale: a record of your visit*. Ironbridge Gorge Museum. Stanley Thornes. Cheltenham. IGMT Archive. Ironbridge.

Alton, G.1988. *The Iron Bridge: A Record of your Visit*. Ironbridge Gorge Museum. Stanley Thornes. Cheltenham. IGMT Archive. Ironbridge.

Anderson, D. 1999. *A Common Wealth: Museums in the Learning Age.* Department for Culture, Media and Sport. London.

Anderson, D., Piscitelli, B., Weier, K., Everett, M. and Tayler, C. 2002. Children's Museum Experiences: Identifying Powerful Mediators of Learning. *Curator: The Museum Journal*, 45: 213–231.

Anderson, D, Kisiel, J and Storksdieck, M. 2006. Understanding teachers' perspectives on field trips: discovering common ground in three countries'. *Curator: The Museum Journal. V*ol. 49, no. 3, pp. 365–86.

Aplin, G. 2007. Heritage as exemplar: a pedagogical role for heritage studies in values education. *Environmentalist.* 27:375–383.

Appiah, K A. 2007. *Cosmopolitanism: Ethics in a world of strangers*. Penguin Books Ltd. London.

Arksey, H and Knight, P. 1999. *Intervieweing for Social Scientists*. London. Sage.

Arokiasamy, C. 2012. Embedding shared heritage: the cultural heritage rights of London's African and Asian diaspora communities. *International Journal of Heritage Studies*. 18:3, 339-345.

Arts Council England. 2016.*Now and the future: A review of formal learning in museums*. Produced by CapeUk. Published November 2016. Available from:

http://www.artscouncil.org.uk/sites/default/files/download-

file/Now_and_the_future_formal_learning_in_museums_NOV2016.pdf .Accessed 25/04/2017.

Askew, M. 2010. The magic list of global status: UNESCO, World Heritage and the agendas of states. In S. Labadi and C. Long, (Eds) *Heritage and globalisation*. London: Routledge. Pp. 19–44.

Associated Press of Pakistan (APP). 2014. *Heritage sites to be used as venue to educate young generation*. February 9, 2014. Available from: http://www.app.com.pk/en_/index.php?option=com_content&task=view&id=265333&Itemid=1 .Accessed 11/12/2014

Atkins, L and Wallace, S. 2012. *Qualitative Research in Education*. SAGE Publications Ltd.

Atkinson, J.2014. *Education, values and ethics in international heritage: Learning to respect*. Ashgate.

Austin, T. 2012. Scale of narrativity. In MacLeod, S. Hourston Hanks, L. and Hale J (Eds*) Museum Making: Narratives, Architectures, Exhibitions*. Routledge. London and New York. Pp107-18.

Australian Government. 2012. *Understanding World Heritage: What is Outstanding Universal Value?* Department of Sustainability, Environment, Water, Population and Communities. Australian Government. September 2012. Available from: http://www.environment.gov.au/system/files/resources/70d3290e-be32-4efa-93da-594948f5df9e/files/outstanding-values-factsheet.pdf .Accessed 04/04/2016.

Badran, A. 2010. *Archaeological Museums and Schools: Teaching Primary-Aged Children about the Past in Jordan.* PhD Thesis. International Centre for Cultural and Heritage Studies/ School of Arts and Cultures Newcastle University. Unpublished.

Badran, A. 2014. Heritage Education in Jordanian Schools: For Knowledge or Profit?. In Suzie Thomas and Joanne Lea (Eds) *Public Participation in Archaeology*. The Boydell Press. Woodbridge. Pages 105-118.

Bailey, C A. 2017. *A Guide to Qualitative Field Research*. Third Edition. SAGE Publications.

Ballantyne, R. Hughes, K and Bond, N. 2016. Using a Delphi approach to identify managers' preferences for visitor interpretation at Canterbury Cathedral World Heritage Site. *Tourism Management*. Volume 54, June 2016. Pages 72–80.

Bath and North East Somerset Council. 2015. *Public invited to Archway Centre exhibition*. Published 22nd December 2015. Available from: http://www.romanbaths.co.uk/news/public-invited-archway-centre-exhibition .Accessed 23/02/2016.

Bath Preservation Trust. 2016a*. Bath World Heritage Site: A resource pack for Primary teachers*. http://www.bath-preservation-trust.org.uk/wp-content/uploads/2016/04/WH_Primary_resources.zip .Accessed 25/04/2016.

Bath Preservation Trust. 2016b. *Bath World Heritage Site: A resource pack for Secondary teachers*. Available from: http://www.bath-preservation-trust.org.uk/wp-content/uploads/2016/04/WH_Secondary_resources.zip .Accessed 25/04/2016.

Baudrillard, J. From the Universal to the Singular: The Violence of the Global. In Bindé ,J (Ed). *The Future of Values: 21st-Century Talks*. Berghahn Books. p19-24.

BBC. 2013. *History in Schools*. Hosted by Rana Mitter with guests: historian David Cannadine, Tristram Hunt MP, Sheila Lawlor of the think tank Politeia, Stephen Drew, headmaster of Brentwood County High School in Essex and Professor Dinah Birch of the University of Liverpool. BBC Radio 3. Published April 2nd 2013. Available from: http://www.bbc.co.uk/programmes/b01rl338 .Accessed 10/11/2014

BBC News. 2012. *British children are culture starved, study says*. Published February 10th 2012. Available from: http://www.bbc.co.uk/news/entertainment-arts-16986878 .Accessed 08/02/2016

Beale, C. 2014. *The Ironbridge Spirit: A History of the Ironbridge Gorge Museum Trust*. Ceredigion: Ironbridge Gorge Museum Trust.

Beck, W. 2006. Narratives of World Heritage in Travel Guidebooks. *International Journal of Heritage Studies*, 12:6, 521-535.

Behrendt, M and Franklin, T. 2014. A Review of Research on School Field Trips and Their Value in Education. *International Journal of Environmental & Science Education*. 2014 (9). Pages 235-245.

Bell, J. Bush, T. Fox, A. Goodey, J. and Goulding, S. 1984. *Conducting Small-Scale Investigations in Educational Management*. London: Harper & Row.

Bellamy, K, Burghes, L and Oppenheim, C. 2009. Learning to Live: Museums, young people and education. In Kate Bellamy and Carey Oppenheim (Eds) *Learning to Live: Museums, young people and education.* Institute for Public Policy Research and National Museum Directors' Conference 2009. Pages 9-20. Available from: http://www.nationalmuseums.org.uk/media/documents/publications/learning_to_live.pdf .Accessed 31/01/2016

Belford, P. 2010, 'Projects ongoing: reflections on archaeology and industrial heritage in the Ironbridge Gorge', in Belford, P. *et al* (eds.). *Footprints of Industry*. Oxford: Archaeopress, 169-188.

Bentley, T. 1998. *Learning beyond the classroom- Education for a changing world*. Routledge.

Bentrupperbäumer, J M , Day, T J and Reser, JP. 2006. Uses, Meanings, and Understandings of Values in the Environmental and Protected Area Arena: A Consideration of "World Heritage" Values, *Society & Natural Resources: An International Journal*. 19:8, 723-741.

Bernsen, D. 2015a. *Erkundung von UNESCO Welterbestätten mit digitalen Medien*. Translated: Exploration of UNESCO World Heritage Sites with digital media. Ein Blog von Daniel Bernsen. Published January 2015. Available from: https://geschichtsunterricht.files.wordpress.com/2015/01/bernsen-erkundung-von-unesco-welterbestc3a4tten-mit-digitalen-medien.pdf .Accessed 06/07/2015

Bernsen, D. 2015b. *Operatorenbeispiele für mobiles Lernen an Welterbestätten*. Translated: Operators examples of mobile learning at World Heritage Sites. Ein Blog von Daniel Bernsen. Published January 2015. Available from: https://geschichtsunterricht.files.wordpress.com/2015/01/operatorenbeispiele-fc3bcr-mobiles-lernen-an-welterbestc3a4tten.pdf .Accessed 06/07/2015

Bernsen, D. 2015c. *Welterbe im Unterricht? Aufruf zur Blogparade.* Translated: World Heritage in the classroom? Call for Blogparade. Medien im Geschichtsunterricht.Ein Blog von Daniel Bernsen. Published on June 9, 2015. Available from: https://geschichtsunterricht.wordpress.com/2015/06/09/welterbe-im-unterricht-blogparade/ .Accessed 09/06/2015

Bjornavold, J and Tissot, P. 2000. Glossary. In J Bjornavold, *Making Learning Visible: Identification, Assessment and Recognition of Non-Formal Learning in Europe*. Thessaloniki: CEDEFOP. Pp199-221.

Black, G. 2012. *Transforming museums in the twenty-first century.* London: Routledge.

Blaenavon World Heritage Site. 2014. Learning from the past, Learning from the future. *Forgotten Landscapes End of Programme Event. 8th and 9th October 2014. Notes of Proceedings*. Available from: http://www.visitblaenavon.co.uk/en/ForgottenLandscapes/Publications/Conference-Presentations/Notes-of-Proceedings.pdf .Accessed 29/12/2014

Blockley, M. 1999a. Archaeological Reconstructions and the Community in the U.K. in Stone, P. and Planel, P. (eds) 1999 *The Constructed Past (experimental archaeology, education and the public).* One World Archaeology. London: Routledge: 15-32.

Blockley, M. 1999b. 'Preservation, Restoration and Presentation of the Industrial Heritage, a Case Study of the Ironbridge Gorge' in Baker, D. and Chitty, G. (eds) *Managing Historic Sites and Buildings*, London: Routledge: 141-156.

Blockley, M. 1999c. *Developing a Management Plan for the Ironbridge Gorge World Heritage Site*. Archaeology and the National Park Idea: Challenges for Management and Interpretation. Volume 16 (Number 4) p107-120. Available from:
http://www.georgewright.org/164blockley.pdf .Accessed 25/05/2015

Blockley, M/Ironbridge Institute. 1994. *Management of Ironbridge Gorge World Heritage Site*. *Monitoring Report prepared by the Ironbridge Institute, University of Birmingham for ICOMOS UK. Consultative Draft.* March 1994. Unpublished. ICOMOS UK Archive.

Boffey, D. 2011. School trips to museums are a thing of the past as budget cuts bite. Publish May 8th 2011. *Guardian*. Available from: http://www.theguardian.com/education/2011/may/08/school-field-trip-funding-threat .Accessed 08/02/2016.

Bokova, I. 2015. Forward. *Agree to Differ*. UNESCO. Tudor Rose Publishing. Available from: http://unesdoc.unesco.org/images/0023/002326/232657e.pdf .Accessed 03/01/2016.

Bokova, I. 2016a. *Address by Irina Bokova, Director-General of UNESCO on the occasion of the Global Colloquium of University Presidents "Preservation of Cultural Heritage: Challenges and Strategies"* hosted by Yale University. Culture in Crisis: Diversity, Sustainability and Teaching. Yale University, New Haven, 11 April, 2016. UNESCO. Available from: http://unesdoc.unesco.org/images/0024/002448/244824e.pdf .Accessed 04/04/2017.

Bokova, I. 2016b. *Address by Irina Bokova, Director-General of UNESCO on the occasion of the 18th Commonwealth Lecture "Educating for Inclusion, Dialogue and Peace"* London, 25 February, 2016. UNESCO. Available from: http://unesdoc.unesco.org/images/0024/002439/243926e.pdf .Accessed 29/03/2016.

Bourdeau,L. Gravari-Barbas, M. and Robinson, R. (Eds) 2015. *World Heritage, Tourism and Identity: Inscription and Co-production*. Ashgate.

van Boxtel, C. Klein, S. Snoep, E. 2011.*Forward*. In Heritage educatıon: Challenges in dealing with the past. Edited by Carla van Boxtel, Stephan Klein and Ellen Snoep. Erfgoed Nederland, September 2011. P6-7. Available from: https://www.eshcc.eur.nl/fileadmin/ASSETS/eshcc/Onderzoek/CHC/Challenges_in_dealing_with_the_past_2011.pdf .Accessed 03/06/2015

Bradford Metropolitan District Council. 2014. *Saltaire World Heritage Site Management Plan 2014*. Available from: http://www.bradford.gov.uk/NR/rdonlyres/9DDF6F95-2399-44AC-B634-

25E6C0EB1701/0/SALTAIREWORLDHERITAGESITEMANAGEMENTPLAN2014.pdf .Accessed 16/02/2016.

Bradley, L. 2009.Prehistory in the Primary Curriculum. A Stonehenge experience to remember. The Historical Association. *Primary History*. Issue 51. Spring 2009.P16-17. Available from: http://www.history.org.uk/file_download.php?ts=1248082788&id=3635 .Accessed 24/07/2015

Bradt, H. 2016. Seaton Jurassic is the new attraction at Devon's dinosaur-rich World Heritage site. *Independent*. Published March 25th 2016. Available from: http://www.independent.co.uk/travel/uk/seaton-jurassic-is-the-new-attraction-at-devons-dinosaur-rich-world-heritage-site-a6950106.html .Accessed 26/03/2016.

Brown, S. 2013. Poetics and politics: Bikini Atoll and World Heritage Listing. In *Transcending the Culture-Nature Divide in Cultural Heritage* (Terra Australis 36): Views from the Asia-Pacific region. Edited by Sally Brockwell, Sue O'Connor, Denis Byrne. ANU E Press. Pages 35-52.

Brumann, C. 2014. Shifting tides of world-making in the UNESCO World Heritage Convention: cosmopolitanisms colliding. *Ethnic and Racial Studies*. Vol 37. No. 12. Pages 2176-2192.

Brumann, C and Berliner, D (Eds). 2016. *World Heritage on the ground: ethnographic perspectives*. Berghahn Books.

Burke, L A. and Miller, M K. 2001. Phone Interviewing as a Means of Data Collection: Lessons Learned and Practical Recommendations. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*. Volume 2 (2) Art. 7. May 2001. P1-8.

Burnett, R. 2012. Dinosaurs come to life at Wyke Regis Infant School. *Bournemouth Echo*. Published 20th February 2012. Available from: http://m.bournemouthecho.co.uk/news/9541184.display/ .Accessed 15/02/2016.

Busher, H and James, N. 2012. In Cyberspace: Qualitative methods for educational research. Ed. Delamont, S., *'Handbook of Qualitative Research In Education'*. Printed by Edward Elgar. Pp. 223-237.

Campbell, S. 2017. Children of the revolution: How to visit Ironbridge Gorge. *Telegraph*. Published 10/08/17. Available from: http://www.telegraph.co.uk/travel/destinations/europe/united-kingdom/england/articles/children-revolution-ironbridge-gorge-shropshire-museum/ .Accessed 24/08/17.

Cameron, C. 2016. UNESCO and Cultural Heritage: Unexpected Consequences. In William Logan, Mairead Nic Craith and Ullrich Kockel (Eds) *A Companion to Heritage Studies*. John Wiley & Sons, Inc. Pages 321-336.

Cameron, C and Rossler, M. 2013. *Many Voices, One Vision: The Early Years of the World Heritage Convention*. Ashgate.

Cannadine, D. Keating, J and Sheldon, N. 2011.*The right kind of history. Teaching the past in twentieth- century England*. Palgrave Macmillan.

Carver, E and Greaney, S.2011. *Stonehenge WHS Interpretation, Learning and Participation Strategy*. English Heritage on behalf of the Stonehenge World Heritage Site Committee. Available from: http://www.stonehengeandaveburywhs.org/assets/SH-WHS-Interpretation-Learning-Participation.pdf .Accessed 02/09/2015

Cass, G and Rogers, J. 2014. *Derwent Valley Mills World Heritage Site: Using Outstanding Universal Value, Values and Attributes in Learning Activities*. Available from: http://www.derwentvalleymills.org/wp-content/uploads/2014/12/Learn_Schools_Resources_ValuesAttributes1.pdf .Accessed 18/07/2015.

Ceesay, B. 2018. 'Revamping a heritage tourism destination for more sustainable growth'. In *World Heritage for Sustainable Development in Africa*. UNESCO World Heritage Centre. Published March 7th 2018. Pages 93-98. Available from:

http://unesdoc.unesco.org/images/0026/002612/261283m.pdf Accessed 04/05/2018.

Cessford, G. R. 1989. *Interpretation for children. Student Paper No. 1*. Canterbury, New Zealand: Lincoln College. Available from:

http://researcharchive.lincoln.ac.nz/bitstream/10182/6497/1/Student%20Paper%20No.%201%20Interpretation%20for%20Children.pdf .Accessed 22/04/2015

Charmaz, K. 2006. *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.

Choi, H. 2015. North and South Korea collaborate in excavating ancient palace. *Guardian*. Available from: http://www.theguardian.com/world/2015/jun/03/north-and-south-korea-excavate-ancient-palace-kaesong .Accessed 15/08/2015

Chown, P. 1985. The pleasures of problem solving. *New Scientist*. 17th October 1985. Pages 53-57.

Chun Tsai, Y. 2002. *Teacher agenda and teacher museum experience: A comparative study of England and Taiwan*. PhD Thesis. Department of Museum Studies. University of Leicester. Available from: https://lra.le.ac.uk/handle/2381/31142 . Accessed 26/01/2016

Clark, K. 2010. Values in Cultural Resource Management. In Smith, George S., Phyllis Mauch. Messenger, and Hilary A. Soderland (eds.) *Heritage Values in Contemporary Society*. Left Coast Press, Walnut Creek, California.p89-100.

Claxton, G., 2001. *Wise up: Learning to live the learning life*. Stafford: Network Educational Press Ltd.

Cleere, HF. 1996. The concept of outstanding universal value in the World Heritage Convention. *Conservation and Management of Archaeological Sites*. 1:227-33.

Clive, S. and Geggie P. 1998. *Unpacking teachers' Packs, an Evaluation of teachers' packs from ten London museums and galleries for engage*. London: London arts board.

Clore Duffield Foundation. 2015a. *Introduction. Space for Learning: A new handbook for creating inspirational learning spaces*. Available from: http://www.spaceforlearning.org.uk/introduction#_ftn1 .Accessed 23/02/2016.

Clore Duffield Foundation. 2015b. *Space for Learning: A new handbook for creating inspirational learning spaces*. Available from: http://www.cloreduffield.org.uk/downloads/Space-for-Learning.pdf .Accessed 23/02/2016.

Cohen, L, Manion, L and Morrison, K. 2011. *Research Methods in Education.* 7th Edition. Routledge.

Coombs, T. 2008. Featured Region – West Midlands. *NCETM Secondary Magazine*. Issue 12. National Centre for Excellence in the Teaching of Mathematics. Available from: https://www.ncetm.org.uk/resources/12_wm_feature .Accessed 01/02/2016

Cooper, C P. 2003. *Managing Educational Tourism*. Channel View Publications.

Cooper, C P. and Latham, J. 1988.The pattern of educational visits in England. *Leisure Studies*. 7:3, 255-266.

Cooper, H. 2002*. History in the Early Years*. Routledge.

Copeland, T. 2006*. Europe and democratic citizenship, heritage education and identity*. Council of Europe. International Centre for Heritage Education University of Gloucestershire Department of Culture and Cultural Heritage. Available from: https://www.coe.int/t/dg4/cultureheritage/heritage/completed/education/DGIV_PAT_HERITAGE_E D%282005%293_EN.pdf .Accessed 04/05/2015

Corbishley*,* M. 2004*.* English heritage education: Learning to learn from the past. In D. Henson, P. Stone*,* and M. Corbishley (Eds.), *Education and the Historic Environment*. London: Routledge.

Corbishley, M. 2005. *Ancient Cities of Merv: Handbook for teachers*. Institute of archaeology, University College London. Available from: https://www.ucl.ac.uk/merv/our_research/education/teachers_handbook_en .Accessed 28/07/2015

Corbishley, M. 2014. *Pinning down the past: archaeology, heritage, and education today*. Boydell Press. Woodbridge, UK.

Corbishley, M and Jorayev, G. 2014. Politics, Archaeology and Education: Ancient Merv, Turkmenistan. In: Thomas, S and Lea, J, (eds.) *Public Participation in Archaeology.* Boydell Press. p119-128.

Cornish Mining World Heritage. 2014. *Discover the Extraordinary. Project Evaluation Summary*. The Cornwall and West Devon Mining World Heritage Site. Available from: http://www.cornish-mining.org.uk/world-heritage .Accessed 15/04/2018.

Cossons, N. 1979. Ironbridge- The First Ten Years. *Industrial Archaeology Review*. Volume 3, Issue 2 (01 March Spring 1979), pp. 179-186.

Council of Europe. 1998. *Council of Europe Committee of Ministers. Recommendation No. R (98) 5 of the committee of ministers to member states concerning Heritage Education*. 17th March 1998. Available from: https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=530590&SecMode=1&DocId=459154&Usage=2 .Accessed 03/06/15

Creativity, Culture and Education.2010a.*World Heritage Festival River Severn Arts Project*. You're your Talent. Available from: http://www.findyourtalent.org/pathfinders/telford-wrekin/projects/world-heritage-festival-river-severn-arts-project .Accessed 31/01/2016**.**

Creativity, Culture and Education.2010b. *Blists Hill Street Kids*. Find Your Talent. http://www.findyourtalent.org/pathfinders/telford-wrekin/projects/blists-hill-street-kids .Accessed 31/01/2016**.**

Creativity, Culture and Education.2010c. *My World, Your World, Our World, promoting community cohesion*. Find Your Talent. Available from: http://www.findyourtalent.org/pathfinders/telford-wrekin/projects/my-world-your-world-our-world-promoting-community-cohesion .Accessed 31/01/2016.

Cremin, K. Edwards, J. and Hackett, A. 2009. *Scoping the Educational Potential of Saltaire World Heritage Site*. On behalf of Bradford City Council. Available from: http://www.saltairevillage.info/Saltaire_WHEA_Educational_Potential_of_Saltaire_100311.pdf .Accessed 09/01/2016.

Crossick, G and Kaszynska, P. 2016. *Understanding the value of arts & culture. The AHRC Cultural Value Project*. Available from: http://www.ahrc.ac.uk/documents/publications/cultural-value-project-final-report/ .Accessed 29/03/2016.

Cummings, W K, Tatto, M T and Hawkins, J. 2001.*Values education for dynamic societies: Individualism or Collectivism*. Edited by William K Cummings, Maria Teresa Tatto and John Hawkins. CERC Studies in Comparative Education 10. Comparative Education Research Centre. The University of Hong Kong.

D&T Association. 2008. Engineering Success: souvenirs of our industrial past. *Designing Magazine*. Summer 2008. Pages 10-11.

Davies, J. 2014. *Is anybody out there? An appraisal of education and outreach programmes by UK World Heritage Sites in the 21st Century*. A Six month Research Project through a placement with English Heritage (International Development-World Heritage) as part of an International Cultural

Heritage Management Masters, Durham University. Available from: https://www.academia.edu/15642521/Is_anybody_out_there_An_appraisal_of_education_and_out reach_programmes_by_UK_World_Heritage_Sites_in_the_21st_Century .Accessed 10/02/2016.

Davies, J. 2015. *UK UNESCO World Heritage Youth Summit 2015, by Jamie Davies*. Published. 28/10/2015. World Heritage UK. Available from: https://worldheritageuk.org/2015/10/28/uk-unesco-world-heritage-youth-summit-2015-by-jamie-davies/ .Accessed 15/02/2016.

Davies, J. 2016. *UK World Heritage Sites Education Portals*. World Heritage Education Blog. Available from: https://worldheritageeducation.wordpress.com/uk-world-heritage-sites/ .Accessed 15/02/2016.

Davies, J. 2017. *Sandford Award and World Heritage Sites*. World Heritage Education Blog. Available from: https://worldheritageeducation.wordpress.com/sandford-award-and-world-heritage-sites/ .Accessed 05/01/2017.

Day, M. 2017. Two British teenagers found guilty of stealing objects from Auschwitz during school trip. *Telegraph*. Published 29th March 2017. Available from: http://www.telegraph.co.uk/news/2017/03/29/two-british-teenagers-found-guilty-stealing-objects-auschwitz/ .Accessed 05/04/2017.

Debevec, V. 2012. Living World Heritage: Skocjan Caves, Slovenia. In Galla, *A.* 2012. *World Heritage*: Benefits B*eyond Borders*. Cambridge University Press. Pages 30-40.

De Cesari, C. 2010.World Heritage and mosaic universalism: A view from Palestine. *Journal of Social Archaeology.* Vol 10(3): 299–324.

De Groot-Reuvekamp, M.J. Van Boxtel,C. Harnett, AR, P.2014. The understanding of historical time in the primary history curriculum in England and the Netherlands. *Journal of Curriculum Studies*. 46:4, 487-514.

Delaplanque, R. 2015. *WH:UK Conference Presentation*. Saltaire, UK. October 14th 2015. Châteaux de la Loire network. Available from: https://worldheritageuk.files.wordpress.com/2015/10/10-remi-deleplanque-loire-valley.pdf .Accessed 15/11/2015.

Delors, J. 1996. *Learning: The Treasure Within. Report to UNESCO of the International Commission on Education for the Twenty-First Century*. Paris: UNESCO.

Department for Culture, Media and Sport (DCMS). 2008. *World Heritage for the Nation: Identifying, Protecting and Promoting our World Heritage*: *A Consultation Paper*. Published December 2nd 2008. Available   from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78444/whconsult ation_engversion.pdf .Accessed 09/01/2015.

Department for Culture, Media and Sport (DCMS). 2010. *World Heritage for the Nation: Identifying, Protecting and Promoting our World Heritage*: *A Government Response*. Published. January 2010.

Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/77423/World_Heritage_for_the_Nation.pdf .Accessed 08/01/2015.

Department for Culture, Media and Sport (DCMS). 2016. *The Culture White Paper*. Published 23/03/2016. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509942/DCMS_The_Culture_White_Paper__1_.pdf .Accessed 23/03/2016.

Department for Education. 2014. *Promoting fundamental British values as part of SMSC in schools*. Departmental advice for maintained schools. Published November 2014. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/380595/SMSC_Guidance_Maintained_Schools.pdf . Accessed 08/06/2018.

Derbyshire County Council. 2016. *Technology Then, Technology Now*. Available from: https://www.derbyshire.gov.uk/education/schools/your_child_at_school/school_visits/environmental_studies_service/learning_outside/derwent_valley_mills/technology_then_technology_now/default.asp .Accessed 14/02/2016.

Derwent Valley Mills World Heritage Site. 2016. *Gateway to the future*. Available from: http://www.derwentvalleymills.org/news_type/gateway-to-the-future/ .Accessed 26/03/2016.

Dewar, K., du Cros, H., and Li, W. 2012. The search for World Heritage brand awareness beyond the iconic heritage: A case study of the Historic Centre of Macao. *Journal of Heritage Tourism*, *7*(4) 323–339.

DeWitt, J. and Osborne, J. 2007. Supporting teachers on science-focused school trips: Towards an integrated framework of theory and practice. *International Journal of Science Education*. 29, 685-710.

Di Giovine, M A. 2009. *The Heritage-scape: UNESCO, World Heritage, and Tourism*. Lexington Books.

Dippon, P. 2012. *Lernort UNESCO-Welterbe. Eine akteurs- und institutionsbasierte Analyse des Bildungsan-spruchs im Spannungsfeld von Postulat und Praxis.* Heidelberg: Selbstverlag des Geographischen Instituts der Universität Heidelberg.

Dixon, L and Hales, A. 2013. *Bringing History Alive through Local People and Places: A guide for primary school teachers*. Routledge.

Docherty, S. and Sandelowski, M. 1999. Focus on qualitative methods: Interviewing children. *Res. Nurs. Health*, 22: 177–185.

Donnachie, I*.* 2010*.* World Heritage*.* In: Harrison, R. *Understanding the Politics of Heritage*. UK: Manchester University Press. pp. 115-153.

Donnellan, V C. 2015. *The role of collections of classical antiquities in UK regional museums: visitors, networks, social contexts*. PhD Thesis. UCL. Unpublished.

Dowling, P and Brown, A. 2000. A grand day out: towards a mode of interrogation of non-school pedagogic sites. *The Curriculum Journal*. 11:2, 247-271.

von Droste, B. 2011. The concept of outstanding universal value and its application: "From the seven wonders of the ancient world to the 1,000 world heritage places today". *Journal of Cultural Heritage Management and Sustainable Development*, Vol. 1 Iss: 1, pp.26 – 41.

Durbin, G. 1989. Improving worksheets in Hooper-Greenhill, E. (Ed), *The Educational Role of the Museum*. London: Routledge, 92-98.

Dyer, M. 1985. *Heritage education handbook.* Strawberry Hill : Published with assistance from Lloyds Bank. Heritage Education Trust.

Edensor, T. 1998.*Tourists at the Taj*: *Performance and Meaning at a Symbolic Site*. Routledge.

Edinburgh World Heritage. 2018a. *New plan unveiled for Edinburgh's UNESCO World Heritage Site*. Published March 27th 2018. Available from: https://ewh.org.uk/new-plan-unveiled-edinburghs-unesco-world-heritage-site/ .Accessed 18/04/18.

Edinburgh World Heritage. 2018b. *'Our World Heritage' exhibition opens at the historic Tron Kirk in Edinburgh*. Published 26th July 2018. Available from: https://ewh.org.uk/our-world-heritage-exhibition-opens-at-the-historic-tron-kirk-in-edinburgh/ .Accessed 09/08/18.

Egan, K. 1997. *The Educated Mind: How Cognitive Tools Shape Our Understanding*. Chicago: University of Chicago Press.

Eisner, E. W. 1991. *The enlightened eye: Qualitative inquiry and the enhancement of educational practice.* Toronto: Collier Macmillan Canada.

Ellis, P. 2016a. Pers. Comm. Penny Ellis, Ironbridge Manager- YHA Coalport and YHA Coalbrookdale. Youth Hostel Association. Email 01/02/2016.

Ellis, P. 2016b. Pers. Comm. Penny Ellis, Ironbridge Manager- YHA Coalport and YHA Coalbrookdale. Youth Hostel Association. Email 22/03/2016.

English Heritage. 2003. *Outreach Strategy*. English Heritage Executive Board Meeting. 16th December 2003. Available from: www.english-heritage.org.uk/content/imported-docs/k-o/community-projects-outreach-strategy.doc Accessed 28/01/2017.

English Heritage. 2004. *Citizenship: Using the evidence of the historic environment – A Teacher's Guide*. English Heritage Education Team. ISBN 1 – 85074-857-8.

English Heritage. 2008. *Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment*. Available from: http://www.english-

heritage.org.uk/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesguidanceapr08web.pdf .Accessed 22/11/2014

English Heritage. 2014. *Conservation Bulletin: Children and Place*. Issue 73: Winter 2014. Available from: https://content.historicengland.org.uk/images-books/publications/conservation-bulletin-73/cb-73.pdf/ .Accessed 03/11/2014

ERA Ltd/Dorset and East Devon World Heritage Site Steering Group. 2009. *An Economic, Social and Cultural Impact Study of the Jurassic Coast: A summary of findings*. January 2009. Available from: http://jurassiccoast.org/downloads/news/economic_impact_study_09.pdf .Accessed 22/09/2015

Estyn. 2007. *Maesyrhandir C.P. School, Plantation Lane, Newtown, Powys, SY16 LQ Inspection Report*. Date of Inspection: 27/11/06. Estyn, Her Majesty's Inspectorate for Education and Training in Wales. Available from: http://www.estyn.gov.uk/download/publication/87496.5/inspection-reportmaesyrhandir-cp-schooleng2007/ .Accessed 27/05/2015

Estyn. 2012. *A report on Victoria Primary School, Poyser Street, Wrexham*, LL13 7RP. Date of inspection: January 2012. Estyn, Her Majesty's Inspectorate for Education and Training in Wales. Available from: http://www.estyn.gov.uk/download/publication/239011.5/inspection-report-victoria-primary-school-eng-2012-english-only/ .Accessed 26/05/2015

Evans, G. 2002. Living in a World Heritage City: stakeholders in the dialectic of the universal and particular. *International Journal of Heritage Studies*. 8:2, 117-135.

Falk, J. H., and Dierking, L. D. 1992. *The museum experience*. Washington, D.C. Whalesback Books.

Falk, J.H and Dierking, L D. 1997. School field Trips: Assessing their long-term impact. *Curator*, 40, 211-218.

Falk, J H and Dierking, L D. 2000. *Learning from Museums: Visitor Experiences and the Making of Meaning*. American Association for State & Local History.

Falser, M. 2010. From Venice 1964 to Nara 1994–Changing Concepts of Authenticity? In *Conservation and Preservation–Interactions between Theory and Practice in Memoriam Alois Riegl (1858–1905)*, edited by Michael Falser, Wilfried Lipp, and Andrzej Tomaszewski. Firenze: Edizioni Polistampa. Pages 115–132.

Feilden, B M and Jokilehto.1998. *Management Guidelines for Cultural World Heritage Sites*. ICCROM/UNESCO/ICOMOS. Rome: ICCROM.

Fester, S. 1987. *New approaches to science*. In Ed Timothy Ambrose, *Education in Museums, Museums in Education*. Edinburgh, HMSO.

Fienberg, J and Leinhardt, G. 2002. Looking through the glass: reflections of identity in conversations at a history museum. In Gaea Leinhardt, Kevin Crowley and Karen Knutson (Editors) *Learning Conversations in Museums*. Lawrence Erlbaum Associates Inc. New Jersey. Pages 167-212.

Flick, U. 2014. An *Introduction to Qualitative Research* (5th ed.). Sage, London.

Ford, A. n.d. *The Big Jurassic Classroom: London 2012 Education Project. Evaluation and Impact Summary*. Unpublished. Obtained from Dr Anjana Ford, Jurassic Coast Education Coordinator in 2015.

Ford, S. 2014*. Forgotten Landscapes & Big Pit: a real partnership for real world learning*. Learning Manager at Big Pit National Coal Museum. Available from: http://www.visitblaenavon.co.uk/en/ForgottenLandscapes/Publications/Conference-Presentations/Heritage-Education-Sharon-Ford.pdf .Accessed 29/12/14

Fordham, J and Hollinshead, E. 2002. *UNESCO Special project 'Young People's participation in World Heritage preservation and promotion'. Evaluation Report.* January 2002. Unpublished.

Forrest, B.2010. Saltaire: Planning for an effective learning experience on a living site. *Primary History*. The Historical Association. Issue 55. Summer 2010.p29-31.

Forth Bridges Forum. 2013. *Forth Bridge World Heritage Consultation: Summary and Analysis*. Available from: http://www.forth-bridges.co.uk/images/forth_bridges_forum/documents/FBWHNSG%20-%20Forth%20Bridge%20Public%20Consultation%20Analysis.pdf .Accessed 02/01/2016

Friere, P. 1970. *Pedagogy of the Oppressed*. Continuum, New York.

Fyall, A., and T. Rakic. 2006. 'The Future Market for World Heritage Sites.' In *Managing World Heritage Sites*, edited by A. Leask and A. Fyall. Oxford, UK: Butterworth-Heinemann, pp. 159-75.

Gardner, H. 2006. *Multiple Intelligences: New Horizons*. Basic Books: A member of the Persus Books Groups.

Gaston, S and Hilhorst, S. 2018. *At home in one's past: Nostalgia as a cultural and political force in Britain, France and Germany. Executive Summary*. DEMOS. Available from: https://www.demos.co.uk/wp-content/uploads/2018/05/At-Home-in-Ones-Past-Executive-Summary.pdf .Accessed:05/08/18.

Gilbert, J. and Priest, M. 1997. Models and discourse: A primary school science class visit to a museum. *Science Education*. 81: 749–762.

Gillham, B. 2005. *Research Interviewing: the range of techniques*. Berkshire. McGraw-Hill Education.

Glaser, B. G. 1992. *Basics of grounded theory analysis: Emergence vs. forcing*. Mill Valley, CA: Sociology Press.

Glaser, B and Strauss, A L.1967. *The Discovery of Grounded Theory*. Aldine.

Global Philadelphia. 2015. *Philadelphia World Heritage Tool Kit*. Published November 2015. Available from: http://globalphiladelphia.org/sites/globalphiladelphia.org/files/PHLWHtoolkit-nov2015.pdf .Accessed 12/01/2016

Gossage, P. 2017. Pers. Comm. Paul Gossage. Director of Marketing & PR, Ironbridge Gorge Museum Trust. Email 03/11/17.

GoUNESCO.2017. *GoUNESCO: Make Heritage Fun.* Available from: http://www.gounesco.com/ .Accessed 11/06/17.

Greaves, G. 2017. Pers. Comm. Georgina Greaves, Environmental Studies Service Manager, Derbyshire, Derbyshire County Council. Communicating World Heritage Conference, Coalbrookdale.

Grever, M. 2012. Dilemmas of common and plural history: reflections on history education and heritage in a globalizing world. In M. Carretero, M. Asensio and M. Rodriguez-Moneo (eds), *History Education and the Construction of National Identities* (Charlotte, NC: Information Age Publishing), 75–91.

Griffin, J. 1998. *School-Museum integrated learning experiences in science: A learning journey*. Ph.D. dissertation, University of Technology, Sydney. Available from: https://opus.lib.uts.edu.au/bitstream/10453/20150/2020/02Whole.pdf .Accessed 17/02/2016.

Griffin, J. 2004. Research on Students and Museums: Looking More Closely at the Students in School Groups. *Science Education*. 88: S59–S70.

Griffin, J. 2012. Exploring and scaffolding learning interactions between teachers, students and museum educators. In *Understanding Interactions at Science Centers and Museums: Approaching Sociocultural Perspectives*. Davidsson, E and Jakobsson, A. (Eds.) Sense Publishers: Rotterdam, The Netherlands. Pages 115-128.

Griffiths, K. 2014. Bellringers to stay dry at historic Saltaire church - thanks to new funding. *The Argus*. Published October 23rd 2014. Available from:
http://www.theargus.co.uk/news/11556341.Bellringers_to_stay_dry_at_historic_Saltaire_church__ _thanks_to_new_funding/ .Accessed 30/05/2015.

Grünberg, C. 2014. *Education for World Heritage Understanding: What World Heritage Can Teach Us.* PhD Thesis. Master of Arts in World Heritage Studies. BTU Cottbus. Available from:

https://www.unesco.de/fileadmin/medien/Dokumente/Bibliothek/Education_for_World_Heritage_ Education.pdf .Accessed 27/04/2016.

Hall, C. M. and Piggin, R. 2002. Tourism Business Knowledge of World Heritage Sites: A New Zealand Case Study. *International Journal of Tourism Research* .4: 401–11.

Halstead, J M. 1996. Values and Values Education in Schools. In J Mark Halstead and Monica J Taylor (Eds). *Values in Education and Education in Values*. London. Falmer Press. p3-14

Ham, S H. 2013. *Interpretation: making a difference on purpose*. Golden, Colorado: Fulcrum Publishing.

Hardiman, N., & Burgin, S. 2013. World Heritage Area listing of the Greater Blue Mountains - did it make a difference to visitation? *Tourism Management Perspectives*, *6*, 63–64.

Harnett, P. 2009. A Balancing act: Blending local, regional, national, European and global contexts. In *Teaching History and Social Studies for Multicultural Europe.* Edited by Semih Aktekin, Penelope Harnett, Mustafa Özturk and Dean Smart.Harf Eğitim Yayıncılığı.Ankara. P142-154.

Harris, R and Reynolds, R. 2014. The history curriculum and its personal connection to students from minority ethnic backgrounds. *Journal of Curriculum Studies*.46:4. p464-486.

Harrison, R. 2013. *Heritage: Critical Approaches*. Routledge.

Harris, R and Reynolds, R. 2014. The history curriculum and its personal connection to students from minority ethnic backgrounds, *Journal of Curriculum Studies*, 46:4, 464-486.

Harrison, D. 2004. 'Introduction: Contested Narratives in the Domain of World Heritage'. *Current Issues in Tourism* 7, nos. 4 & 5: 281–90.

Hawkey, K. 2014. A new look at big history. *Journal of Curriculum Studies*. 46:2, 163-179.

Hazen, H. 2008. Of Outstanding Universal Value: The Challenge of Scale in Applying the World Heritage Convention at National Parks in the US. *Geoforum*, 39: 252-64.

Hein*, G E. 1982. 'Evaluation of museum programs and exhibits'*, in Hooper Greenhill (Ed), *The Educational Role of the Museum*. London: Routledge.

Hein, G E. 1995. The Constructivist Museum. *Journal for Education in Museums*. No. 16. Pages 21-23.

Heine, B. Treu, N. Amend, T. and Jäger, T.2012. *Our Treasures at Risk. World Heritage in Times of Climate Change. Contributions from Youth Messengers around the Globe*. From the series: Sustainability Has Many Faces. No. 12, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn and Bonn. Available from: http://conservation-development.net/Projekte/Nachhaltigkeit/DVD_12_WHS/Material/pdf_Serie_Nachhaltigkeit/12_WHS_en.pdf .Accessed 16/02/2015.

Henderson, T. 2015. Schools project launched to use Hadrian's Wall as teaching resource. *Chronicle Live.* Published 07/04/2015. Available from: http://www.chroniclelive.co.uk/news/north-east-news/schools-project-launched-use-hadrians-89924797200280 .Accessed 10/04/2015 .

Hennessey, M., McConnell, A. and Martin, J., 2014. *Developing an Educational Assessment: Recruiting and Retaining Teacher Participants.* SAGE. Available from http://srmo.sagepub.com/view/methods-case-studies-2014/n385.xml .Accessed 27/09/2015

Hennessey, R A S. 1975. Industrial Archaeology in Education. *The History Teacher*. Vol 9. No. 1. (Nov 1975).pp29-41.

Henson, D. 2003. *World Heritage Education principles and the UK Curriculum*. Available from: https://www.academia.edu/1674792/World_heritage_education_principles_and_the_UK_curriculum .Accessed 20/01/2016

Henson*, D.* 2004a*.* The Educational Framework in the United Kingdom. In *Education and the Historic Environment*, edited by *D.* Henson*, P.* Stone*,* and M, Corbishley. English Heritage. Routledge. Pages 13-21.

Henson, D. 2004b. Archaeology in Schools. In *Education and the Historic Environment* edited by Henson, D., Stone, P., and Corbishley, M. English Heritage. Routledge. Pages 23-32.

Henson, D. 2008. Putting people in their place: the link between citizenship and heritage. *Journal of Education in Museums.* 29: 28-36.

Helena Henriques, M. Tomaz, C and Abreu Sá, A. 2012. The Arouca Geopark (Portugal) as an educational resource: A case study. *Episodes* 35(4):481 · December 2012. Available from: http://www.episodes.org/index.php/epi/article/view/59759/46749 .Accessed 17/02/2016.

Heritage Alive! 2008. *Index*. Available from: http://www.heritagealive.eu/index.html . Accessed 13/02/2016.

Hewison, R. 1987. *The Heritage Industry: Britain in a Climate of Decline,* London, Methuen.

Hicks,D. 2007. Responding to the world. In David Hicks and Cathie Holden (Editors) *Teaching the Global Dimension: Key principles and effective practices*. Routledge.P3-13.

Historic England. 2016. *World Heritage Sites in the United Kingdom*. Published November 24th 2016. Available from: https://www.youtube.com/watch?v=VhidUvtRR-M&t=15s .Accessed 11/12/16.

Holden, J .2008. *Culture and Learning: Towards a New Agenda*. Consultation Paper. February 2008. DEMOS. Available from: http://www.demos.co.uk/files/C&LFinal26Feb08.pdf .Accessed 12/12/2014

Hølleland, H. 2013. What does Skiing have to do with World Heritage!?: Glimpses into Visitors Awareness of World Heritage. In BG Jansson (Editor). *The Significance of World Heritage: Origins, Management, Consequences. The Future of the World Heritage Convention in a Nordic Perspective*. Papers Presented at Two Conferences in Falun (Sweden) 2010 and in Vasa (Finland) 2011. Dalarna

University WHILD Report NR 2013:1. Pages 106-121. Available from: http://www.diva-portal.org/smash/get/diva2:612266/FULLTEXT01.pdf .Accessed 10/03/2015.

Hølleland, H and Johansson, M. 2017. '…to exercise in all loyalty, discretion and conscience': on insider researcher and the World Heritage Convention. *International Journal of Cultural Policy*. P1-13.

Hooper-Greenhill, E. 1994a. *The educational role of the museum*. Leicester Readers in Museum Studies. Routledge.

Hooper-Greenhill, E. 1994b. *Museum and Gallery Education*. Leicester Museum Studies. Leicester University Press. London.

Hooper-Greenhill, E. (Ed.). 1996. *Improving museum learning*. East Midlands Museum Service.

Hooper-Greenhill, E. 2004. Measuring Learning Outcomes in Museums, Archives and Libraries: The Learning Impact Research Project (LIRP). *International Journal of Heritage Studies*. 10:2, 151-174.

Hooper-Greenhill, E and Moussouri, T. 2001. *Researching learning in museums and galleries, 1990–1999: a bibliographic review*, Museum Studies University of Leicester, Leicester.

Hooper-Greenhill, E. Dodd, J. Phillips,M. O'Riain, H. Jones, C. Woodward, J.2004. *What did you learn at the museum today? The evaluation of the impact of the Renaissance in the Regions Education Programme in the three Phase 1 Hubs (August, September and October 2003).* Museums, Libraries and Archives Council/Research centre for museums and galleries. Available from: https://www2.le.ac.uk/departments/museumstudies/rcmg/projects/what-did-you-learn-at-the-museum-today-1/What%20did%20you%20learn%20at%20the%20museum%20today.pdf   .Accessed 27/05/2015

Hooper-Greenhill, E. Dodd, J. Gibson, L. Phillips, M. Jones, C. Sullivan, E. 2006a. *What did you learn at the museum today? Second study. Evaluation of the outcomes and impact of learning through the implementation of the Education Programme Delivery Plan across nine Regional Hubs (2005)*. *Part*

one. Published February 2006. Museums, Libraries and Archives Council/Research centre for museums and galleries/ University of Leicester. Available from:

http://www2.le.ac.uk/departments/museumstudies/rcmg/projects/what-did-you-learn-at-the-museum-today-second-

study/What%20did%20you%20learn%202%20full%20report%20Part%201.pdf Accessed 27/05/2015

Hooper-Greenhill, E. Dodd, J. Gibson, L. Phillips, M. Jones, C. Sullivan, E. 2006b. *What did you learn at the museum today? Second study. Evaluation of the outcomes and impact of learning through the implementation of the Education Programme Delivery Plan across nine Regional Hubs (2005). Part Two.* Published February 2006. Museums, Libraries and Archives Council/Research centre for museums and galleries/ University of Leicester. Available from:

http://www2.le.ac.uk/departments/museumstudies/rcmg/projects/what-did-you-learn-at-the-museum-today-second-

study/What%20did%20you%20learn%202%20full%20report%20Part%202.pdf .Accessed 09/07/2015

Hooper-Greenhill, E. Dodd, J. Gibson, L. Phillips, M. Jones, C. Sullivan, E. 2006c. *What did you learn at the museum today? Second study. Evaluation of the outcomes and impact of learning through the implementation of the Education Programme Delivery Plan across nine Regional Hubs (2005). Appendices.* Published February 2006. Museums, Libraries and Archives Council/Research centre for museums and galleries/ University of Leicester. Available from: http://www2.le.ac.uk/departments/museumstudies/rcmg/projects/what-did-you-learn-at-the-museum-today-second-study/Appendices.pdf .Accessed 09/07/2015

Hooper-Greenhill, E. 2007. *Museums and Education: Purpose, Pedagogy, Performance*. Routledge.

Hutt, C. 1981. Toward a taxonomy and conceptual model of play. In H. I. Day (Ed.), *Advances in intrinsic motivation and aesthetics,* 251-298. New York: Plenum Press.

ICOMOS. 1985. *ICOMOS Recommendation: Ironbridge Gorge*. Available from: http://whc.unesco.org/archive/advisory_body_evaluation/371.pdf . Accessed 11/01/2015.

ICOMOS. 2005. *Filling the Gaps – an Action Plan for the Future*. An ICOMOS study compiled by Jukka Jokilehto, contributions from Henry Cleere, Susan Denyer and Michael Petzet. Available from: http://whc.unesco.org/uploads/activities/documents/activity-646-3.pdf .Accessed 07/04/2016.

ICOMOS. 2008. *The World Heritage List. What is OUV? Defining the Outstanding Universal Value of Cultural World Heritage Properties.* An ICOMOS study compiled by Jukka Jokilehto, with contributions from Christina Cameron, Michel Parent and Michael Petzet. ICOMOS. Available from: http://www.international.icomos.org/publications/monuments_and_sites/16/pdf/Monuments_and _Sites_16_What_is_OUV.pdf .Accessed 12/11/2014

ICOMOS Australia. 2013*. The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Revised 2013)*. Available from: http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf .Accessed 06/12/2014.

Iinuma, M. Nakamura, T. Chiyokura, H.2013. *Collaborative Learning In Japanese Higher Education: Application of Collaborative Site to 3D World Heritage Creation Project*. IEEE 63rd Annual Conference International Council for Educational Media (ICEM). Available from: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6820199 .Accessed 11/12/2014

Imalwa, E. 2018. 'The management of Twyfelfontein World Heritage site, Namibia'. In *World Heritage for Sustainable Development in Africa*. UNESCO World Heritage Centre. Published March 7th 2018. Pages 131-140. Available from: http://unesdoc.unesco.org/images/0026/002612/261283m.pdf Accessed 04/05/2018.

Ironbridge Gorge Museum Trust. 1986. *IGMT Press Release*. Dated 27 November 1986. IGMT Archive. Coalbrookdale.

Ironbridge Gorge Museum Trust. 1989. *Under Fives and Museums: Guidelines for Teachers*. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust.1990a. *The GCSE and Museums*: *a handbook for teachers*. Ironbridge Gorge Museum Trust. Printed by Printex Press Limited. Telford, Shropshire. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1990b. *Primary schools and Museums: Key Stage 1. Guidelines for teachers*. Education at Ironbridge Series. David Forber (Head of Education). June 1990. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Printext Press Ltd. Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1991. *Ironbridge Gorge Museum Teacher' Handbook*. BP Educational Service. First published by the Ironbridge Gorge Museum Trust 1981. Revised 1986. Printed by Printex Press Limited. Telford, Shropshire. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1992. *Primary schools and Museums: Key Stage 2. Guidelines for teachers*. Education at Ironbridge Series. David Forber (Head of Education). November 1992. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1993. *The Ironbridge Gorge and Coalbrookdale 1750-1900. Key Stage 3. Information for teachers*. Education at Ironbridge. December 1993. David Forber (Head of Education). Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust.1994. *Coalport and Jackfield 1750-1900. Key Stages 2 and 3. Information for teachers.* Education at Ironbridge. October 1994. David Forber (Head of Education). Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust.1995. *Science and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. David Forber (Head of Education). February 1995. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1996a. *Art and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). October 1996. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1996b. *Design and Technology and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). April 1996. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust.1996c. *Geography and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). April 1996. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge.

Ironbridge Gorge Museum Trust. 1997. *History and Museums: Key Stage 3. Guidelines for teachers*. Education at Ironbridge Series. Suzanne Spicer (Education Officer). September 1997. Published by the Ironbridge Gorge Museum Trust with sponsorship from the British Petroleum Company plc. Printed by Wozencroft Printers, Telford. IGMT Archive. Ironbridge

Ironbridge Gorge Museum Trust. 2010a. *Draft Conservation Plan for the Iron Bridge*. August 2010. Unpublished.

Ironbridge Gorge Museum Trust (IGMT). 2007. *Memorandum 35: Submission from Ironbridge Gorge Museum Trust*. Select Committee on Science and Technology Written Evidence. June 2007. Available from: http://www.parliament.the-stationery-office.co.uk/pa/cm200607/cmsctech/903/903we39.htm .Accessed 03/01/2015

Ironbridge Gorge Museum Trust (IGMT). 2009. *The Ironbridge Gorge Museum Trust Limited Annual Review 2008*. Available from: http://www.ironbridge.org.uk/assets/Uploads/downloadAR2008.pdf Accessed 12/11/2014

Ironbridge Gorge Museum Trust (IGMT). 2010b. *Strategic Plan 2010-14*. Available from: http://www.ironbridge.org.uk/assets/Uploads/downloadstrategicplan2010-2014.pdf Accessed 12/11/2014

Ironbridge Gorge Museum Trust (IGMT). 2011. *The Ironbridge Gorge Museum Trust Limited Annual Review 2010*. Available from: http://www.ironbridge.org.uk/assets/Uploads/downloadannualreview2010.pdf Accessed 12/11/2014

Ironbridge Gorge Museum Trust (IGMT). 2013. *Workshop- Cantilever Challenge Key Stage 3 & 4.* The Ironbridge Gorge Museum Trust: Education 14/01/2013. Available from: http://www.ironbridge.org.uk/assets/Uploads/KS3-4-Cantilever-Challenge2.pdf .Accessed 04/06/2015

Ironbridge Gorge Museum Trust (IGMT). 2014a. *The Ironbridge Gorge Museum Trust Limited Annual Review 2013*. Available from: http://www.ironbridge.org.uk/assets/Uploads/ANNUAL-REVIEW-2014-lo.pdf Accessed 12/11/2014

Ironbridge Gorge Museum Trust (IGMT). 2014b. *About Us.* Ironbridge Gorge Museum Trust. http://www.ironbridge.org.uk/about-us/ironbridge-gorge-museum-trust/ .Accessed 30/11/2014

Ironbridge Gorge Museum Trust (IGMT). 2015a. *Ironbridge Gorge Museum Trust wins prestigious 2015 Hudson's Heritage Award*. Published 3 March 2015. Ironbridge Gorge Museum Trust Website. Available from.

http://www.ironbridge.org.uk/about-us/news-releases/2015/mar/ironbridge-gorge-museum-trust-wins-prestigious-2015-hudson-s-heritage-award/#sthash.BLs5LHb2.dpuf .Accessed 09/06/2015

Ironbridge Gorge Museum Trust (IGMT). 2015b. *The Ironbridge Gorge Museum Trust Limited Annual Review 2014.* Available from: http://www.ironbridge.org.uk/assets/Uploads/ANNUAL-REVIEW-2014-5-Oct-2015.pdf .Accessed 19/02/2016.

Ironbridge Gorge Museum Trust (IGMT). 2015c. *A detailed Access Guide to Coalbrookdale Museum of Iron & The Old Furnace*. Available from: http://www.ironbridge.org.uk/assets/Uploads/A3-CBD-Access-Guide-LR.pdf .Accessed 15/03/2016.

Ironbridge Gorge Museum Trust (IGMT). 2015d. *Blists Hill map*. Available from: http://www.ironbridge.org.uk/assets/Uploads/BH-Map.pdf .Accessed 17/03/2016.

Ironbridge Gorge Museum Trust (IGMT). 2015e. *A detailed Access Guide to Coalport China Museum.* Available from: http://www.ironbridge.org.uk/assets/Uploads/A3-CPT-Access-Guide-LR.pdf .Accessed 12/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2015f. *A detailed Access Guide to Jackfield Tile Museum and Fusion.* Available from: http://www.ironbridge.org.uk/assets/Uploads/A3-JFD-Access-Guide-LR.pdf .Accessed 11/06/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016a. *Ironbridge Gorge Museum celebrates World Heritage Site's 30th anniversary with free admission for Shropshire and Telford residents on Saturday 19th March*. Published February 12th 2016. Available from: http://www.ironbridge.org.uk/about-us/news-releases/2016/feb/ironbridge-gorge-museum-celebrates-world-heritage-site-s-30th-anniversary-with-free-admission-for-shropshire-and-telford-residents-on-saturday-19th-march/#sthash.pgP6WDxA.dpuf .Accessed 03/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016b. *Coalbrookdale History Around Us. AO1 AO2 AO3. Student Visit Pack*. Available from: http://www.ironbridge.org.uk/assets/Uploads/resourcehistorycontrolledstudent.pdf .Accessed 23/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016c. *Coalbrookdale Trial Controlled Assessment. History Around Us Assessment Objectives 1, 2 & 3. Teacher's Guide -How To Use The Pack*. Available from: http://www.ironbridge.org.uk/assets/Uploads/resourcehistorycontrolledteachersguide.pdf .Accessed 23/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016d. *Coalbrookdale Assignment. History Around Us Objectives 1, 2 and 3. Source Pack. "The Darby family cared about its workers between 1700 and 1860"*. Available from: http://www.ironbridge.org.uk/assets/Uploads/resourcehistorycontrolledsourcepack.pdf .Accessed 23/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016e. *2016 Education Prices*. Available from: http://www.ironbridge.org.uk/assets/Uploads/2016-discounted-education-admissionTable.doc .Accessed 24/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016f. *2016 Education Workshop Prices*. Available from: http://www.ironbridge.org.uk/assets/Uploads/2016-Ed-Workshops.docx .Accessed 24/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2016g. *Ironbridge Gorge Museum Trust: Travel & Tourism Diploma Resource Pack. Destination Management in a World Heritage Site*. Available from: http://www.ironbridge.org.uk/assets/Uploads/resourcetraveltourismdiploma.pdf .Accessed 24/04/2016.

Ironbridge Gorge Museum Trust (IGMT). 2017a. *The Coalbrookdale Masterplan*. IGMT. Available from: http://www.ironbridge.org.uk/support-us/appeals-and-projects/the-coalbrookdale-master-plan/ .Accessed 28/01/17.

Ironbridge Gorge Museum Trust (IGMT). 2017b. *Museum of Iron*. IGMT. Available from: http://www.ironbridge.org.uk/support-us/appeals-and-projects/museum-of-iron/ .Accessed 28/01/17.

Ironbridge Gorge Museum Trust. 2017c. *The Coalbrookdale Masterplan: A major development programme to reveal how Coalbrookdale changed the world*. IGMT. Unpublished.

Ironbridge Institute. 2000. *World Heritage Site Management Plan [Ironbridge]. Draft*. August 2000. The Ironbridge Institute. University of Birmingham. Unpublished.

ITV Report. 2017. *Children across Cumbria join Lake District world heritage status bid*. Published 23/05/2014. Available from: http://www.itv.com/news/border/2017-05-23/children-across-cumbria-join-lake-district-world-heritage-status-bid/ . Accessed 06/06/18.

Iwan, C. 2014. Blaenavon Ironworks launches its new educational tours. *Gwent News- South Wales Argus.* Published 16th December 2014. Available from: http://www.southwalesargus.co.uk/news/gwentnews/11668758.Blaenavon_Ironworks_launches_its_new_educational_tours/ .Accessed 02/01/2015.

Jaafar, M., Rasoolimanesh, S M., and Noor, S M.2016. An investigation of the effects of an awareness campaign on young residents' perceptions: a case study of the Lenggong World Heritage Site. *Tourism Planning & Development*.13:2, 127-139.

Jackson, A. 2000. Inter-acting with the Past - the use of participatory theatre at museums and heritage sites. *Research in Drama Education: The Journal of Applied Theatre and Performance*. 5:2, 199-215.

Jahanbegloo, R. 1993. *Conversations with Isaiah Berlin*. Phoenix Paperback. Orion Books Limited. London.

Jamieson, I. 1984. Industry and the primary school. In Jamieson, I M.1984. *We make kettles: studying industry in the Primary School*. Schools Council Programme 3: developing the curriculum for a changing world. Longman. Pages 7-19.

Jaramillo, J. 2018. 'Heritage Guardians'. In *World Heritage for Sustainable Development in Africa*. UNESCO World Heritage Centre. Published March 7th 2018. Pages 141-146. Available from: http://unesdoc.unesco.org/images/0026/002612/261283m.pdf Accessed 04/05/2018.

Jennings, H. 2012. *Pandaemonium 1660–1886: The Coming of the Machine as Seen by Contemporary Observers*. Icon Books Ltd.

Jimura, T. 2015. The Relationship between World Heritage Designation and Local Identity. In Laurent Bourdeau, Maria Gravari-Barbas and Mike Robinson (Eds) *World Heritage, Tourism and Identity: Inscription and Co-production*. Ashgate. P81-92.

Johansen, R. 2012. Cultural landscapes: challenges and possibilities: Vegaoyan - The Vega Archipelago, Norway. In Galla, *A.* 2012. *World Heritage*: Benefits B*eyond Borders*. Cambridge University Press. p53-68.

Jones, M. 2014. Incorporating historic places in the 2014 National Curriculum. Education Manager, The Historical Association. In English Heritage. *Conservation Bulletin: Children and Place*. Issue 73: Winter 2014. Available from: https://content.historicengland.org.uk/images-books/publications/conservation-bulletin-73/cb-73.pdf/ .Accessed 03/11/2014

Jones, A. 2018. Slate sent out in hopes of UNESCO bid boost. *Cambrian News*. Published July 1st 2018. Available from: http://www.cambrian-news.co.uk/article.cfm?id=122579&headline=Slate%20sent%20out%20in%20hopes%20of%20UNESCO%20bid%20boost&sectionIs=news&searchyear=2018 . Accessed 09/08/18.

Jurassic Coast World Heritage Partnership. 2009. *Dorset and East Devon Coast World Heritage Site*

Management Plan 2009-2014. Final version for publication. Adopted by the WH Steering Group 15/10/09. Available from: https://www.dorsetforyou.com/media/185851/CD.ENV6-Dorset-and-East-Devon-Coast-World-Heritage-Site-Management-Plan/pdf/CD.ENV6_Dorset_and_East_Devon_Coast_World_Heritage_Site_Management_Plan.pdf .Accessed 16/02/2016.

JWF: Museums and Heritage Consultants/ Scotinform.*2012. The Antonine Wall Towards an Education strategy. The Antonine Wall Research to Inform an Education Strategy.* Commissioned by Historic Scotland. Available from: http://www.antoninewall.org/sites/default/files/The%20Antonine%20Wall%203.1.pdf .Accessed 04/09/2015

Kallo, K. 2016. Critical outcomes of museum learning. In In *Revisiting the educational value of museums: Connecting to Audiences*. NEMO- Network of European Museum Organisations. NEMO 23rd Annual Conference 5 – 7 November 2015 in Pilsen, Czech Republic. Pages 12-15. Available from: http://www.ne-mo.org/fileadmin/Dateien/public/NEMo_documents/NEMO_AC2015_EduVal_documentation.pdf.Accessed 23/03/2016.

Kambutu, J. and Nganga, L W. 2008. In these uncertain times: Educators build cultural awareness through planned international experiences. *Teaching and Teacher Education*. 28. Pages 939–951.

Kell, E. 2013. *Tavistock World Heritage Site Key Centre Learning Strategy*. June 2013. Emmie Kell Consulting. Available from: http://www.westdevon.gov.uk/CHttpHandler.ashx?id=7882&p=0 .Accessed 20/01/2015

Kendall, S and Rodger, J. 2015. *Evaluation of Learning Away: Final Report*. May 2015. Paul Hamlyn Foundation / York Consulting. Available from: http://learningaway.org.uk/wp-content/uploads/LA-Final-report-2015.pdf .Accessed 07/07/2015

Khawajike, E. 1990. The study of our universal cultural heritage through the Unesco Associated Schools Project. In Stone, P. G., and MacKenzie, R. 1990. *The Excluded past*: Archaeology in Education. London: Unwin Hyman. Pages 15-23

Kiddie, G. 2014. *Learning from the Past, Planning for the Future: Heritage Education.* FLP Interpretation Consultant. Available from:http://www.visitblaenavon.co.uk/en/ForgottenLandscapes/Publications/Conference-Presentations/Heritage-Education-Gareth-Kiddie.pdf .Accessed 29/12/2014

King, L M. and Halpenny, E A. 2014. Communicating the World Heritage brand: visitor awareness of UNESCO's World Heritage symbol and the implications for sites, stakeholders and sustainable management. *Journal of Sustainable Tourism*. 22:5, 768-786.

Kirk, E S. 2014. *Crystal teeth and skeleton eggs: snapshots of young children's experiences in a natural history museum*. PhD Thesis. University of Leicester. Available from: https://lra.le.ac.uk/bitstream/2381/29320/1/2014KirkESPhD.pdf .Accessed 05/05/2016 .

Kirshenblatt-Gimblett, B. 2006. 'World heritage and cultural economics'. In I. Karp, C. A. Kratz, L. Szwaja & T. Ybarra-Frausto (Eds) *Museum Frictions. Public Culture/Global Transformations*. Chapel Hill: Duke University Press, pp. 161-202.

Kisiel, J. F. 2005. Understanding elementary teacher motivations for science fieldtrips. *Science Education*, 89(6), 936 – 955.

Kirsten, C. 2007. Dessau-Wörlitz for Children and Young People World Heritage in Young Hands. In BTU (Brandenburgisch Technische Universität) / DUK (Deutsche UNESCO-Kommission e.V.) (eds.) *Nature and Culture*. DUK/BTU: Bonn and Cottbus. Page 156-169. Available from: http://www-docs.tu-cottbus.de/interkulturalitaet/public/buch1.pdf . Accessed 01/05/2015.

Kostarigka, E. 2010. *Learning history in and outside the classroom: how the interaction between museums and primary schools constructs understandings of history*. PhD Thesis. Cardiff University.

Labadi, S. 2005. *Questioning the Implementation of the World Heritage Convention: A Value- Based analysis of purposefully sampled nomination dossiers*. PhD Thesis. Institute of Archaeology, University College London.

Labadi, S. 2013. *UNESCO, cultural heritage, and outstanding universal value: value-based analyses of the World Heritage and Intangible Cultural Heritage Conventions*. Lanham, Md.; London: AltaMira Press.

Lackovic, N, Crook,C, Cobb,S, Shalloe,S and D'Cruz M.2015.Imagining technology-enhanced learning with heritage artefacts: teacher-perceived potential of 2D and 3D heritage site visualisations. *Educational Research*. 57:3, 331-351.

Laves, W H C and Thomson, C A. 1957. *Unesco : purpose, progress, prospects*. Bloomington.

Lochrie, S.2016. Engaging and marketing to stakeholders in World Heritage Site management: a United Kingdom multiple case study perspective. *Journal of Marketing Management*. 32:15-16, 1392-1418.

Logan, W. 2010. Development of world heritage studies in university education, in German Commission for UNESCO (ed.), *World heritage and cultural diversity*, pp. 38-43, Deutsche UNESCO-Kommission, Germany.

Logan, W. 2013a. 'Learning to engage with human rights in heritage education' in M.-T. Albert, R. Bernecker and B. Rudolff (eds) *Understanding Heritage: Perspectives in Heritage Studies*, IKO - Verlag für Interkulturelle Kommunikation, Frankfurt am Main. 35-48.

Logan, W.2013b. Patrimonito leads the way: UNESCO, cultural heritage, children and youth, in Darian-Smith, Kate and Pascoe, Carla (eds), *Children, childhood and cultural heritage*, pp. 21-39, Routledge, London, England.

Logan, W.2014. World Heritage Education, Training, and Capacity Building. In Claire Smith (Editor). *Encyclopaedia of Global Archaeology*. Springer: New York. pp 7878-7883.

Logan, W. and Wijesuriya, G. 2015. 'The new heritage studies and education, training and capacity building', in W. Logan, M. Nic Craith and U. Kockel (eds) *The Blackwell Companion to Heritage Studies*, New York, Wiley-Blackwell. Pages 557-573.

Lowenthal, D. 1998.*The heritage crusade and the spoils of history*. Cambridge University Press.

Maddern, J.2005. 'Huddled Masses Yearning to Buy Postcards: The Politics of Producing Heritage at the Statue of Liberty—Ellis Island National Monument'. In Harrison, D and Hitchcock. M. (Eds). *The politics of World Heritage: Negotiating tourism and conservation*. Channel View Publications, Clevedon. p23-34.

Malcolm-Davies, J. 2004. Borrowed Robes: The Educational Value of Costumed Interpretation at Historic Sites. *International Journal of Heritage Studies*. 10:3, 277-293.

Mann, A. 2016. Pers. Comm. Amy Mann. Learning Producer, Tower of London, Historic Royal Palaces. Email 15/02/16.

Marcotte, P. and Bourdeau, L. 2006. Tourists' knowledge of the UNESCO designation of World Heritage sites: the case of visitors to Quebec City. *International Journal of Arts Management.* 8 (2): 4-13.

Marcus, R., Burke, C. and Dobel-Ober, D., 2009. *Creative Spaces: Children as co- researchers in the design of museum and gallery learning*. Renaissance North West/ Museums, Libraries, Archives

Council. Available from: http://www.nwfed.org.uk/wp-content/uploads/2009/02/585_creative_spaces_report1.pdf .Accessed 05/05/2016.

Mason, J. 2002. *Qualitative Research*. Second Edition. SAGE Publications Ltd.

Mason, P and Kuo, I. 2008. Visitor Attitudes to Stonehenge: International Icon or National Disgrace? *Journal of Heritage Tourism*. 2:3, 168-183.

Mason, R, MacLean, M GH, de la Torre, M. 2003. *Hadrian's Wall World Heritage Site. English Heritage. A Case Study*. The Getty Conservation Institute, Los Angeles. J Paul Getty Trust. Available from:

http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/hadrians_wall.pdf .Accessed 04/10/2015

Matsuura, K. 2004. Preface. Director General UNESCO. In Bindé ,J (Ed). *The Future of Values: 21st-Century Talks*. Berghahn Books. ix-x.

Matthews, J. 2014. Children learn much from field trips that they can't get from lectures or textbooks. *Washington Post.* Available from: http://www.washingtonpost.com/lifestyle/on-parenting/children-learn-much-from-field-trips-that-they-cant-get-from-lectures-or-textbooks/2014/01/27/467d96b4-845a-11e3-bbe5-6a2a3141e3a9_story.html .Accessed 30/10/2014

McCrum, E. 2013. History teachers' thinking about the nature of their subject. *Teaching and Teacher Education.* 35. 73-80.

McDonald, A. 2013. *How effectively can World Heritage in Young Hands support delivery of the revised National Curriculum for secondary schools in England?* Thesis. University of Newcastle Upon Tyne. Available from: http://ethos.bl.uk/OrderDetails.do?did=1&uin=uk.bl.ethos.618217#sthash.hD1yZztS.dpuf .Accessed 05/12/2014

McLoughlin, A. 2008. *Leisure and Tourism Museum Information Sheets: Help with Leisure and Tourism (GCSE, AVCE and GNVQ)*. Ironbridge Gorge Museum Trust. Available from: http://www.ironbridge.org.uk/assets/Uploads/resourceleisuretourism.pdf .Accessed 10/09/2015

McNaught, C., and Lam, P. 2010. Using Wordle as a Supplementary Research Tool. *The Qualitative Report*, *15*(3), 630-643.

Meho, L. I. 2006. E-mail interviewing in qualitative research: A methodological discussion. *Journal of the American Society for Information Science and Technology*.57: 1284–1295.

Meskell, L.. 2002. Negative heritage and past mastering in archaeology. *Anthropological Quarterly*. 75: 557–574

Meskell, L. 2014. States of Conservation: Protection, Politics, and Pacting within UNESCO's World Heritage Committee. *Anthropological Quarterly,* Volume 87, Number 1, Winter 2014, pp. 217-243.

Meskell, L. 2016. World Heritage and WikiLeaks Territory, Trade, and Temples on the Thai-Cambodian Border. *Current Anthropology*. Volume 57 Number 1. February 2016. Available from: https://www.academia.edu/21737650/World_Heritage_and_WikiLeaks_Territory_Trade_and_Temples_on_the_Thai-Cambodian_Border .Accessed 22/03/2016.

Meskell, L. 2018. *A future in ruins: UNESCO, World Heritage and the dream of peace*. Oxford University Press: New York.

Miller, D. 2008. The uses of value. *Geoforum*. Vol 38 (2). Pages 1122-1132.

Millward Brown. 2013. *Giant's Causeway Visitor Experience Survey 2013*. Northern Ireland Tourist Board/National Trust. Available from: http://www.nitb.com/Portals/2/downloads/Giants%20Causeway%20Visitor%20Experience%20Survey.pdf .Accessed 10/01/2016.

MingStones, G. 2003. *Baseline Research Report for Marking the Wall's Education Project*. July 2003. Hadrian's Wall Tourism Partnership. Community and Education Project. Unpublished. Professor Peter Stone, ICCH, University of Newcastle.

MingStones, G. 2004. *Pax Britannica 2004: An evaluation of the Pax Britannica Education and Community event held at Walltown*. Hadrian's Wall Tourism Partnership. Community and Education Project. Unpublished. Professor Peter Stone, ICCH, University of Newcastle.

MingStones, G. 2006. *Final Research Report: Executive Summary and Issues*. Hadrian's Wall Tourism Partnership. Community and Education Project. 5th June 2006. Unpublished. Professor Peter Stone, ICCH, University of Newcastle.

Mligo, E S. 2016. *Introduction to Research Methods and Report Writing: A Practical Guide for Students and Researchers in Social Sciences and the Humanities*. Wipf and Stock Publishers.

Monticello Digital Classroom.2018. *Virtual Field Trips with Monticello*. Available from: https://classroom.monticello.org/student-activity/virtual-field-trips-with-monticello/ .Accessed 04/05/2018.

Morris, S. 2016. Forward: Reflections on the U.S nominations to the UNESCO World Heritage List: Past, Present and Future. In US/ICOMOS. 2016. *U.S World Heritage Gap Study Report*. Available from: https://issuu.com/usicomos/docs/icom001_1603_gapstudyidlayout-issuu . Pages i-iii. Accessed. 02/04/2016.

Mortimer, C. 2015. Two British teenagers face trial over Auschwitz thefts. *Independent*. Published December 29th 2015. Available from: http://www.independent.co.uk/news/world/europe/two-british-teenagers-face-trial-over-auschwitz-thefts-a6790126.html .Accessed 29/12/2015

Moscardo, G. Green, D. and Greenwood, T. 2001. How Great is the Great Barrier Reef! Tourists's Knowledge and Understanding of the World Heritage Status of the Great Barrier reef. *Tourism Recreation Research,* 26, 19-25.

Munn, A. 2016. Pers. Comm. Email 16/03/2016. Angela Munn, Senior Tutor (Team Leader), Preston Montford Field Studies Centre field centre, Shropshire.

Museums, Libraries and Archives Council (MLA). 2008. *How we define Learning*. Inspiring Learning for All. Available from: http://www.inspiringlearningforall.gov.uk/learning/ .Accessed 26/11/2014

Naish, D. 2013. Scenes from the Lyme Regis Fossil Festival. *Scientific American*. Available from: https://blogs.scientificamerican.com/tetrapod-zoology/scenes-from-lyme-regis-fossil-festival/ .Accessed 30/05/17**.**

Nathan, A. 2014. School trips: Effective learning outside the classroom. *Teach Secondary*. Available from: http://www.teachsecondary.com/SEN/view/school-trips-effective-learning-outside-the-classroom . Accessed 30/10/2014

National Geographic. 2015. *Activity: Mapping World Heritage. Where are sites of significant natural and cultural heritage located around the world?* .Available from: http://education.nationalgeographic.org/activity/mapping-world-heritage/ .Accessed 02/01/2016

Nakazawa, S. and Tabuchi, I. 2008. Educational practices of world heritage education as the form of regional studies. *Bulletin of Nara University of Education: Cultural and Social Sciences*. 57 (1). Pages 129-140.

National Trust. 2015. *Studley Royal Park and Fountains Abbey Ruins WHS Draft Management Plan 2015-2021*. Available from: https://www.nationaltrust.org.uk/fountains-abbey-and-studley-royal-water-garden/documents/download-the-draft-management-plan-appendices.pdf . Accessed 24/01/2016

Ndoro, W. 2015. World Heritage Sites in Africa: What are the Benefits of Nomination and Inscription?. In *A Companion to Heritage Studies* (eds W. Logan, M. N. Craith and U. Kockel). P392-409.

Neaverson, P and Palmer,M. 2012. *Industrial Archaeology: Principles and Practice*. Routledge.

Newman, I and Benz, C R. 1998. *Qualitative-quantitative Research Methodology: Exploring the Interactive Continuum*. SIU Press.

Newman, M, Bird, B, Tripney,J, Kwan,I, Vigurs,C, Kalra, N, Bangpan,M. 2010. *The learning impacts for young people attending Museums, Galleries and Heritage sites: an - in depth review*. In CASE. 2010. Understanding the impact of engagement in culture and sport: A systematic review of the learning impacts for young people. July 2010. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/88447/CASE-systematic-review-July10.pdf .Accessed 30/10/2014

Norman, K. 2009. *World Heritage for the Nation: Identifying, Protecting and Promoting our World Heritage: Analysis of responses to the policy review*. Centre for Applied Archaeology, UCL. Published December 2009. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/77425/World_Heritage_for_the_Nation_2010_CAA_Analysis.pdf .Accessed 06/04/2016.

Novick, G. 2008. Is There a Bias Against Telephone Interviews In Qualitative Research? *Res Nurs Health*. 2008 August. 31(4): 391–398.

OCR.2011. *Advanced Subsidiary GCE Spanish-Speaking*. Available from: http://www.ocr.org.uk/Images/65367-question-paper-unit-f721-speaking-teacher-examiner-booklet.pdf .Accessed 01/06/2017.

OCR. 2017. *AS GCE Applied Travel and Tourism: Introducing Travel and Tourism. Pre-release case study*. June 2017. Available from: http://www.ocr.org.uk/Images/325564-unit-g720-case-study-june-2017.pdf .Accessed 01/06/17.

O'Donoghue, T A. 2007. *Planning Your Qualitative Research Project: An Introduction to Interpretivist Research in Education*. Routledge.

Ofsted. 2002. *Coalbrookdale and Ironbridge CE (VA) Primary School, Telford Inspection Report*. Dates of Inspection: 16-17th April 2002. Unique reference number: 123542. OFTSED. Available from: http://www.ofsted.gov.uk/inspection-reports/find-inspection-report/provider/ELS/123542 .Accessed 26/05/2015

Ofsted. 2011. *Coalbrookdale and Ironbridge CofE Primary School*: *Inspection report*. Inspection: 5-6th October 2011. Unique Reference number: 123542. OFTSED. Available from: http://www.ofsted.gov.uk/inspection-reports/find-inspection-report/provider/ELS/123542 .Accessed 26/05/2015

Oldham, J. 2013. Changing face of classrooms as report reveals less than a third of pupils are white. *Birmingham Mail.* Published October 24th 2013. Available from: http://www.birminghammail.co.uk/news/local-news/changing-face-birminghams-classrooms-report-6232489 .Accessed 13/09/2015

Oxford University Press. 2015. Value: Dictionary Definition. *Oxford English Dictionary*. Available from: http://www.oxforddictionaries.com/definition/english/value .Accessed 12/02/2015.

Packer, S. 2015. *Contemporary Crafts student leads community project to create public art piece on the Cornish mining heritage*. Posted 10/04/2015. Plymouth College of Art Blog. Available from: http://www.plymouthart.ac.uk/latest/blog/contemporary-crafts-student-leads-local-community-project-to-create-a-publi/ .Accessed 05/04/2016.

Palau-Saumell, R., Forgas-Coll, S., Sánchez-García, J., and Prats-Planagumà, L. 2013. Tourist behaviour intentions and the moderator effect of knowledge of UNESCO WHS: The case of La Sagrada Familia. *Journal of Travel Research*. 52 (3), 364-376.

Paton, G. 2010. School trips 'axed' for thousands of pupils. *Telegraph*. Published 03/03/2010. Available from: http://www.telegraph.co.uk/education/educationnews/7360956/School-trips-axed-for-thousands-of-pupils.html .Accessed 12/02/2016.

Pendlebury, J. 2009. *Conservation in the Age of Consensus*. Routledge.

Petzet, M. 2008. What is Outstanding Universal Value. *Values and Criteria in Heritage Conservation. Proceedings of the International Conference of ICOMOS, ICCROM and Fondazione Romualdo Del Bianco*. 2-4 March 2007. Florence. Edited by Andrzej Tomaszewski. Edizioni Polistampa. Firenze. P315-321.

PLB Consulting Ltd. 2008. *Ironbridge Gorge World Heritage Site Overarching Interpretation Strategy for The Ironbridge Gorge World Heritage Site Partners*. Final Report. December 2008. Report Number 5484. Unpublished.

Poria, Y., Reichel, A., & Cohen, R. 2011. World heritage site - is it an effective brand name?: A case study of a religious heritage site. *Journal of Travel Research*, 50(5), 482-495.

Preston Jr, W P. 1989. The History of U.S- UNESCO relations. In Preston Jr, WP, Herman, E S. and Schiller, H I (Eds). *Hope and Folly: The United States and UNESCO, 1945-1985*. University of Minnesota Press: New York. Pages 3-202.

Price, C. 2016. Community Development Officer, Severn Gorge Countryside Trust. Pers. Comm. Email 22/02/2016.

Price, J. 2013.Interpreting Industrial Heritage. In Marion Blockley and Alison Hems (Eds) *Heritage Interpretation*. Routledge. p111-121.

PricewaterhouseCoopers LLP (PWC). 2007. *The Costs and Benefits of World Heritage Site Status in the UK.* December 2007. Prepared for the Department for Culture, Media and Sport, Cadw and Historic Scotland by PricewaterhouseCoopers LLP. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78452/PwC_fullreport.pdf .Accessed 20/08/2015

Quin, Carméla. 2016. Keynote Statement on World Heritage Education. *furnace Journal*. Issue 4. Available from: https://furnacejournal.files.wordpress.com/2016/06/keynote-article-for-furnace-journal_v1cq.pdf .Accessed 06/12/2018.

Raine, J. Forthcoming. *Communicating World Heritage Values: Industrial World Heritage*. Ironbridge International Institute for Cultural Heritage, University of Birmingham. Unpublished PhD Thesis.

Rakic, T and Chambers, D. 2008. World Heritage: Exploring the Tension Between the National and the 'Universal'. *Journal of Heritage Tourism*, 2:3, 145-155.

Raths, L E, Harmin, M and Simon, SB.1966. *Values and Teaching: Working with Values in the Classroom*. Columbus. OH. Charles E Merrill.

Rebanks, J. 2009. *World Heritage Sites: Is there opportunity for economic gain?* A preview of unique research commissioned by the Lake District World Heritage Project into the economic impacts of World Heritage Status around the world. Rebanks Consulting Ltd. Available from: http://www.lakedistrict.gov.uk/__data/assets/pdf_file/0009/393966/WHSEconomicGainSupplement.pdf Accessed 28/12/2015.

Reisinger,Y and Turner, L. 2011.*Cross-Cultural Behaviour in Tourism*. Routledge.

Remoaldo, P C., Vareiro, L., Cadima Ribeiro,J. and Freitas Santos, F. 2014. Does Gender Affect Visiting a World Heritage Site?. *Visitor Studies*, 17:1, 89-106.

Reser, JP and Bentrupperbaumer, JM. 2005. What and where are environmental values? Assessing the impacts of current diversity of use of 'environmental' and 'World Heritage' values. *Journal of Environmental Psychology*. 25:125–146

Richon, M. 2005.World Heritage Education, A Challenge of Citizenship. In Europa Nostra Forum 2004 "*Heritage and education: a European perspective*"–Proceedings (The Hague, 1 October 2004), Europa Nostra, The Hague: Europa Nostra. Pages 53-4.

Ringbeck*,* B. 2008. *Management Plans for World Heritage Sites. A practical guide*. German Commission for UNESCO: Bonn. Available from: https://www.unesco.de/fileadmin/medien/Dokumente/Bibliothek/Management_Plan_for_Wold_H eritage_Sites.pdf .Accessed 21/12/2016.

Ripp, M. 2016. Visitor Centres vs Museums. *GoUNESCO*. Published January 31st 2016. Available from: http://www.gounesco.com/visitor-centres-vs-museums/ .Accessed 01/02/2016.

Rissom, H. 2007. World Heritage Education and Education for Sustainable Development (ESD). In *Training Strategies for World Heritage Management*. Editors: Marie-Theres Albert, Roland Bernecker, Diego Gutierrez Perez, Nalini Thakur and Zhang Nairen. Proceedings of the International Symposium "Heritage Education and Capacity Building in Heritage Management" in BTU Cottbus in June 2006. Deutsche UNESCO-Kommission / Asia-Link Programme. Pages 47-49 Available from: http://www-docs.tu-cottbus.de/interkulturalitaet/public/buch3.pdf .Accessed 28/12/2017.

Ritchie, BW, Carr, N and Cooper, C. 2003. *Managing Educational Tourism*. Channel View Publications.

Ritchie, B W and Coughlan, D. 2004. Understanding school excursion planning and constraints: an Australian case study. *Tourism Review International*. Vol. 8, pp. 113–126.

Rix, M. 1964. A proposal to establish national parks of Industrial Archaeology. *Journal of Industrial Archaeology*, 1 (3). Pages184-192.

Robertson-von Trotha, C and Hauser, R. 2010. UNESCO and Digitalized Heritage: New Heritage – New Challenges. In Offenhäußer, Dieter; Zimmerli, Walther Ch.; Albert, Marie Theres (Eds) *World Heritage and Cultural Diversity*. German Commission for UNESCO. Pages 69-78. Available from: https://www.unesco.de/fileadmin/medien/Dokumente/Bibliothek/world_heritage_and_cultural_div ersity.pdf Accessed 28/12/2017.

Roche, D and Quinn, B. 2016. Heritage sites and schoolchildren: insights from the Battle of Boyne. *Journal of Heritage Tourism*. Page 1-14.

Rodwell, D. 2006. *Ironbridge conference on world heritage: The values of world heritage*. IHBC. Context 95: July 2006. Available from http://ihbc.org.uk/context_archive/95/ironbridge/conf.htm .Accessed 30/10/2014

Rodwell, D. 2008. *Conservation and Sustainability in Historic Cities*. John Wiley and Sons.

Rokeach, M. 1973. *The Nature of Human Values*. The Free Press. Collier Macmillan Publishers. London.

Rokeach, M. 1979. *Understanding Human Values*. New York: The Free Press.

Ronström, O. 2014 Consequences of World Heritage production: the heritage town. In H. Hølleland and S. Solheim (eds.) *Between dream and reality: Debating the impact of World Heritage Listing*. Primitive tider special edition 2014, p. 7-17. Reprosentralen, Oslo.

Rössler, M. 2018. *18 April: Celebrating young people on the International Day for Monuments and Sites.* UNESCO World Heritage Centre. Published 18th April 2018. Available from: https://whc.unesco.org/en/news/1810 .Accessed 18/04/18.

Rowe, SM, Wertsch, JV and Kosyaeva, TY. 2002. Linking Little Narratives to Big Ones: Narrative and Public Memory in History Museums. *Culture & Psychology.* Vol. 8(1): 96–112.

Ryan, J and Silvanto, S. 2009. The World Heritage List: The making and management of a brand. *Place Branding and Public Diplomacy* (2009) 5, 290–300.

Salazar, N B. 2012. Shifting values and meanings of heritage: From cultural appropriation to tourism interpretation and back. In S. M. Lyon & C. E. Wells (Eds.), *Global tourism: Cultural heritage and economic encounters* (pp. 21-41). Lanham: Altamira. Available from: https://www.academia.edu/1199234/Shifting_values_and_meanings_of_heritage_From_cultural_appropriation_to_tourism_interpretation_and_back .Accessed 22/11/2014

Savenije, G M. 2014. *Sensitive History under Negotiation: Pupils' historical imagination and attribution of significance while engaged in heritage projects*. PhD Thesis. Erasmus Universiteit Rotterdam. Gildeprint Drukkerijen – Enschede.

Scaife, S. 2002. *The Northumberland National Park Authority Roman Roadshow 2002- an evaluation*. Hadrian's Wall Community and Education Team. November 2002. Unpublished. Professor Peter Stone, ICCH, University of Newcastle.

Schauble, L. Gleason,M Lehrer,R Bartlett,K Petrosino,A Allen,A Clinton,K Ho,E Jones,M Lee,Y Phillips,J Siegler,J and Street,J. 2002. Supporting science learning in museums. In Gaea Leinhardt, Kevin Crowley and Karen Knutson (Editors) *Learning Conversations in Museums*. Lawrence Erlbaum Associates Inc. New Jersey. Pages 425-452.

Schmutz, V and Elliott, M A.2017.World Heritage and the scientific consecration of 'outstanding universal value'. *International Journal of Comparative Sociology*. Vol 58 (2). P140-159.

Schneider,H R. 2013. *Community Involvement in the preservation of World Heritage Sites: The Case of the Ukrainian Carpathian Wooden Churches*. PhD Thesis. Texas A&M University. Available from: http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/151017/SCHNEIDER-DISSERTATION-2013.pdf?sequence=1&isAllowed=y .Accessed 13/02/16.

Scott, J.2014. *New history curriculum threatens museums*. BBC News. 1st September 2014. Available from: http://www.bbc.co.uk/news/uk-england-28461034 .Accessed 28/10/2014

Scott, W., and Oulton, C. 1998. Environmental values education: An exploration of its role in the school curriculum. *Journal of Moral Education*, 27(2), 209–224.

Scottish Government. 2014. *Bridging the past and future*. Published 29/10/2014. Available from: https://news.gov.scot/news/bridging-the-past-and-future .Accessed 06/06/2018.

Scottish Museums Council. 1987. Appendix educational visits to museums *in Education in Museums, Museums in Education*. Ed Timothy Ambrose. 1987. Scottish Museums Council. p108-111 .

Serota, N. 2009. Museums and Young People: Where are we now? In Kate Bellamy and Carey Oppenheim (Eds) *Learning to Live: Museums, young people and education.* Institute for Public Policy Research and National Museum Directors' Conference 2009.   Pages 21-29. Available from: http://www.nationalmuseums.org.uk/media/documents/publications/learning_to_live.pdf .Accessed 31/01/2016

Shackley, M. 1998. Introduction- World Cultural Heritage Sites. In Myra Shackley (ed.) *Visitor management: case studies from World Heritage Sites*. London: Butterworth-Heinemann. p1-9.

Shaffer, S E. 2016. *Engaging Young Children in Museums*. Routledge.

Shalaginova, I. 2012.*Understanding Heritage: A Constructivist Approach to Heritage Interpretation as a Mechanism for Understanding Heritage Sites*. Thesis. BTU Cottbus. Available from: http://d-nb.info/1023480921/34

Sheppard, B. 1993. Aspects of a successful trip. In B. Sheppard (Ed.), *Building Museum and School Partnerships*. Washington: American Association of Museums. P38-52.

Shettel, H H.1973. Exhibits: art form or educational medium. *Museum News Washington*. Vol 52. No. 1. Pages 32-41. Available from: http://www.randikorn.com/library/Shettel_Exhibits_Art_Form_or_Educational_Medium.pdf .Accessed 11/06/2015

Silberman, N A. 2012. Heritage interpretation and human rights: documenting diversity, expressing identity, or establishing universal principles?, *International Journal of Heritage Studies*. 18:3, 245-256.

Sikora, J. 2007. Offsite Education of World Heritage Sites for Teachers and Students: A Study of Cahokia Mounds State Historic Site. In 2007. *Training Strategies for World Heritage Management*. Editors: Marie-Theres Albert, Roland Bernecker, Diego Gutierrez Perez, Nalini Thakur and Zhang Nairen. Proceedings of the International Symposium "Heritage Education and Capacity Building in Heritage Management" in BTU Cottbus in June 2006. Deutsche UNESCO-Kommission / Asia-Link Programme. Available from: http://www-docs.tu-cottbus.de/interkulturalitaet/public/buch3.pdf .Accessed 03/11/2014.

Simmonds, S and Thomas, B. 2014*. Stonehenge and Avebury World Heritage Site Management Plan 2015.Consultation Draft December 2014.* Published in December 2014 on behalf of the Stonehenge and Avebury WHS Steering Committees. Editor Elizabeth Nichols. Available from: http://consult.wiltshire.gov.uk/file/3229542 .Accessed 30/12/2014

Simpson, D J. 1992. The Imposition of Values: Reflections on a Contemporary Educational Problem. *Journal of Humanistic Education and Development*. Vol 30. p111-121.

Smith, C. 2015.'Rags to Riches' project teaches Hayle school children about town's heritage. *The Cornishman*. Published March 18th 2015. Available from: http://www.cornishman.co.uk/Rags-Riches-project-teaches-Hayle-school-children/story-26194865-detail/story.html .Accessed 12/12/2015

Smith, M K. 2003. *Issues in Cultural Tourism Studies*. Psychology Press.

Smith, L. 2006. *Uses of Heritage*. Routledge.

Sodikoff, G M.2012. *Forest and Labor in Madagascar: From Colonial Concession to Global Biosphere*. Indiana University Press.

Soos, G. 2014. *Hungary – Education: The integrated World Heritage and ICH training programme for secondary school teachers in Hungary*. UNESCO Venice Office. Published June 11th 2014. SlideShare. Available from: http://www.slideshare.net/UNESCOVENICE/hungary-education-the-integrated-world-heritage-and-ich-training-programme-for-secondary-school-teachers-in-hungary .Accessed 13/12/2014

Spradley, J P.1979.*The Ethnographic Interview*. United States, Wadsworth Group/Thomas Learning.

Spradley, J P. 1980. *Participant observation*. New York: Holt, Rinehart & Winston.

Staiff, R. 2013. *Re-imagining heritage interpretation. Enchanting the past-future*. Farnham: Ashgate.

Stancliffe, S. 2014. *Heritage in a locally relevant curriculum*. Head of Education and Inclusion, English Heritage. In English Heritage. *Conservation Bulletin: Children and Place*. Issue 73: Winter 2014. Available from: https://content.historicengland.org.uk/images-books/publications/conservation-bulletin-73/cb-73.pdf/ pdf .Accessed 03/11/2014

Stanford Encyclopaedia of Philosophy. 2014. *Intrinsic vs. Extrinsic Value*. Available from: http://plato.stanford.edu/entries/value-intrinsic-extrinsic/ .Accessed 29/01/2015

Starr, F. 2009. *Mobilising Corporate Responsibility for World Cultural Heritage Conservation*. Cultural Heritage Centre for Asia & the Pacific, Deakin University, Melbourne, Unpublished PhD Thesis.

STEAM Co.2017. *'No ONE Left Behind': Launching STEAM Co. across Shropshire*. Available from: https://www.youtube.com/watch?v=h8mT31GaTRg .Accessed 08/06/17

Stone, P and Planel, P G. 1999. Introduction in Stone, P. and Planel, PG (Ed). 1999. *The constructed past: experimental archaeology, education and the public.* London: Routledge in association with English Heritage. Pages 1-13.

Stone, P. 2004. Introduction. In *Education and the Historic Environment*. Edited by Henson, D., Stone, P., and Corbishley, M. English Heritage. Routledge. Pages 1-12.

Stone, P. 2014a.Sharing Archaeology: Introduction. In Stone, P. and Hui, Z. (eds.). *Sharing Archaeology: Academe, Practice, and the Public.* New York: Routledge. p 1-16.

Stone, P. 2014b. Sharing Archaeology: An Obligation, Not a Choice. In Stone, P. and Hui, Z. (eds.). *Sharing Archaeology: Academe, Practice, and the Public.* New York: Routledge. P17-35.

Stone, P. 2014c. World Heritage Sites and Education: UNESCO's World Heritage Education Programme. In Claire Smith (Editor). *Encyclopaedia of Global Archaeology*. Springer: New York. pp 7903-7907.

Stone, P G and MacKenzie, R. 1990. Introduction: the concept of the excluded past. In Stone*, P. G., and MacKenzie, R. 1990. The Excluded past*: *Archaeology in Education*. London: Unwin Hyman. P1-14.

Strauss, A., and Corbin, J. 1998. *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.

Stronck, D. R. 1983. The comparative effects of different museum tours on children's attitudes and learning. *Journal of Research in Science Teaching*, 20(4), 283 - 290.

Ströter-Bender, J. 2007. Teaching World Heritage – Learning Paths and Museum Coffers. In 2007. *Training Strategies for World Heritage Management*. Editors: Marie-Theres Albert, Roland Bernecker, Diego Gutierrez Perez, Nalini Thakur and Zhang Nairen. Proceedings of the International Symposium "Heritage Education and Capacity Building in Heritage Management" in BTU Cottbus in June 2006. Deutsche UNESCO-Kommission / Asia-Link Programme. Available from: http://www-docs.tu-cottbus.de/interkulturalitaet/public/buch3.pdf .Accessed 01/03/2015

Ströter-Bender, J. 2010. *World Heritage Education. Positionen und Diskurse zur Vermittlung des UNESCO-Welterbes*. KONTEXT Kunst – Vermittlung – Kulturelle Bildung. Band 4. Tectum Verlag.

Sturges, J and Hanrahan, K J. 2004. Comparing telephone and face-to-face qualitative interviewing: a research note. *Qualitative Research*. SAGE Publications. Vol. 4(1): 107-118.

Suina, J H .1994.Museum multicultural education for young learners in Hooper Greenhill (Ed), *The Educational Role of the Museum*. London: Routledge. Pages 12-15.

Sullivan, S. 2004. Local Involvement and Traditional Practices in the World Heritage System. *Linking Universal and Local Values: Managing a Sustainable Future for World Heritage*. World Heritage Papers:13. Paris: UNESCO.p49-57.

Sutcliffe, D. 2013. *Creative Coast: A case study in how the arts can support management of a natural World Heritage Site*. Published April 2013. Jurassic Coast Partnership. Available from:

http://jurassiccoast.org/wp-content/uploads/2015/10/Creative-Coast-A-Case-Study.pdf .Accessed 14/12/2015

Sutcliffe, K and Kim, S. 2014. Understanding children's engagement with interpretation at a cultural heritage museum. *Journal of Heritage Tourism.* 9:4, 332-348.

Tal, T. 2012. Imitating the family visit: small-group exploration in an ecological garden. In *Understanding Interactions at Science Centers and Museums: Approaching Sociocultural Perspectives*. Davidsson, E and Jakobsson, A. (Eds.) Sense Publishers: Rotterdam, The Netherlands. Pages 193-206.

Tal, T and Steiner, L.2006. Patterns of teacher-museum staff relationships: School visits to the educational centre of a science museum. *Canadian Journal of Science, Mathematics and Technology Education*. 6:1, 25-46.

Taylor, A. 2014. *Blaenavon Education: Where do we go from Here?.* Torfaen CBC Heritage Officer Available from: http://www.visitblaenavon.co.uk/en/ForgottenLandscapes/Publications/Conference-Presentations/Blaenavon-Education-Ashleigh-Taylor.pdf .Accessed 01/03/2015

Telford Development Partnership. 2014. *Telford & Wrekin and Shropshire Destination Management Plan 2014-2017*. March 2014. Available from: http://www.telfordpartnership.co.uk/wp-content/uploads/2014/03/Telford-Destination-Management-Plan-DRAFT-MARCH-2014.pdf .Accessed 08/06/2015

Telford and Wrekin Council. 2001. *Ironbridge Gorge World Heritage Site Management Plan*. Unpublished.

Thapa, B. 2007. Issues and Challenges of World Heritage Sites in Nepal. *Edited by Roger White and John Carman. World Heritage: Global Challenges, Local Solutions*. Proceedings of a conference at Coalbrookdale, 4-7 May 2006 hosted by the Ironbridge Institute. BAR International Series. 1698. Pages 23-27.

Thornton, S J. 2005. *Teaching Social Studies that Matters: Curriculum for Active Learning*. Teachers College Press.

Timothy, D.J. 1997. 'Tourism and the personal heritage experience'*, Annals of Tourism Research* 24(3): 751–4.

Titchen, Sarah M. 1996 On the construction of 'outstanding universal value'. Some comments on the implementation of the 1972 UNESCO World Heritage Convention in, *Conservation and Management of Archaeological Sites*, 1(4): 235-242.

Trelka, M. Forthcoming. *Communicating World Heritage Values: World Heritage and Communities*. Ironbridge International Institute for Cultural Heritage, University of Birmingham. Unpublished PhD Thesis.

Trinder, B. 1972. The Ironbridge Gorge Museum Trust: Three Years of Progress. Museum News. *West Midlands Studies.* Pages 32-35.

Trinder, B. 1976. Museums: Industrial Conservation and Industrial History: reflections on the Ironbridge Gorge Museum. *History Workshop*. Pages 171-6.

Tsai, S.2011. Multimedia courseware development for World Heritage sites and its trial integration into instruction in higher technical education. *Australasian Journal of Educational Technology*. 27(7), 1171-1189. Available from: http://www.ascilite.org.au/ajet/ajet27/tsai-sc.pdf .Accessed 11/12/2014

Tucker, H and Carnegie, E. 2014. World heritage and the contradictions of 'universal value'. *Annals of Tourism Research*. 47 (2014) 63–76.

Turtinen, J. 2000. *Globalising Heritage – On UNESCO and the Transnational Construction of a World Heritage.* SCORE. (Stockholm Center for Organizational Research). Available from: http://www.score.su.se/polopoly_fs/1.26651.1320939806!/200012.pdf Accessed 10/02/2015

Ucko, P. 1989. Forward. In Cleere, H (Ed). *Archaeological Heritage Management in the Modern World*. London: Unwin Hyman. Pages ix-xxii.

UK/US Countryside Exchange 1996. *Ironbridge Gorge World Heritage Site*. Unpublished.

UN. 2014. *Infographics*. UN Global Education First Initiative. Available from. http://www.globaleducationfirst.org/infographics.html .Accessed 12/01/2015.

UN HRC. 2011. *Report of the independent expert in the field of cultural rights, Farida Shaheed*. A/HRC/17/38. Available from: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/images/Report%20of%20Farida%20Shaheed.pdf .Accessed 20/01/2015.

UN News Centre. 2016. UNESCO chief welcomes the liberation of Syria's Palmyra world heritage site. *UN News Centre.* Published March 24th 2016. Available from: http://www.un.org/apps/news/story.asp?NewsID=53542#.Vveeh5Mk29b .Accessed 26/03/2016.

UNESCO. 1945. *UNESCO Constitution*. Available from: http://portal.unesco.org/en/ev.php-URL_ID=15244&URL_DO=DO_TOPIC&URL_SECTION=201.html .Accessed 10/01/2015.

UNESCO 1972. *Convention Concerning the Protection of the World Cultural and Natural Heritage.* World Heritage Centre. Available at: http://whc.unesco.org/en/conventiontext/ .Accessed 12/10/14.

UNESCO 1998. *World Heritage Youth Forum (1998) Second International. Osaka, Japan 22-29 November 1998*. World Heritage Centre. Available from: http://whc.unesco.org/en/activities/134/ .Accessed 22/04/2015

UNESCO. 2000. *World Heritage in Young Southeast Asian Hands. Workshop on the Introduction of the World Heritage Kit. UNESCO World Heritage Education Kit, Sukhothai, Thailand 2000*. UNESCO Principal Regional Office for Asia and the Pacific. Bangkok. Available from: http://unesdoc.unesco.org/images/0012/001226/122610eb.pdf .Accessed 17/01/2015

UNESCO. 2001. *Karslkrona Recommendations- World Heritage Youth Forum (2001) Karslkrona, Sweden. 3-8 September 2001.* World Heritage Centre. Available from: http://whc.unesco.org/en/activities/141/ .Accessed 28/04/2015.

UNESCO. 2002a. *Learning to be: A holistic and integrated approach to values education for human development: Core values and the valuing process for developing innovative practices for values education toward international understanding and a culture of peace*. Bangkok: UNESCO Asia and Pacific Regional Bureau for Education. UNESCO-APNIEVE Sourcebook, No. 2. Available from: http://unesdoc.unesco.org/images/0012/001279/127914e.pdf .Accessed 05/12/2014

UNESCO. 2002b. *World Heritage in Young Hands: To know, cherish and act. An educational resource kit for teachers.* World Heritage Centre. Paris. Available from: http://whc.unesco.org/uploads/activities/documents/activity-54-19.pdf .Accessed 08/01/2015

UNESCO. 2002c. *The Bratislava Declaration -* World Heritage Youth Forum (2002) Sub-regional, First Central European Meeting. World Heritage Centre. Available from: http://whc.unesco.org/en/activities/136/ .Accessed 27/04/2015.

UNESCO. 2003a. *Periodic Report Africa*. World Heritage Centre. Paper Series n°3 . April 2003. World Heritage Centre. Available from: http://whc.unesco.org/document/3183 .Accessed 06/12/2014

UNESCO. 2003b. *Mobilizing Young People for World Heritage*. World Heritage 2002
Shared Legacy, Common Responsibility Workshops 12-15 November 2002 Treviso - Italy. World Heritage paper series 08. World Heritage Centre. Available from: whc.unesco.org/document/3191 .Accessed 11/12/2014

UNESCO. 2004a. Periodic Report and Regional Programme Arab States 2000-2003. World Heritage Centre. *Paper Series n°11.* June 2004. World Heritage Centre. Available from: http://whc.unesco.org/document/3187 .Accessed 06/12/2014

UNESCO. 2004b. *The State of World Heritage in the Asia-Pacific Region 2003*. World Heritage Centre. Paper Series n°12. November 2004. World Heritage Centre. Available from: http://whc.unesco.org/document/4968 .Accessed 06/12/2014

UNESCO. 2004c. *Periodic Report 2004, Latin America and the Caribbean. The State of the World Heritage in Latin America and the Caribbean* (English Version May 2004). World Heritage Centre. Available from: http://whc.unesco.org/archive/2004/whc04-28com-16e.pdf .Accessed 06/12/2014

UNESCO. 2004d. *International Conference on World Heritage in Young Hands - A Dialogue among Civilizations.* 30th Anniversary World Heritage Convention 1972-2002. Aswan/Cairo, Egypt 6-12 February 2002.UNESCO World Heritage Centre. Available from: http://unesdoc.unesco.org/images/0013/001324/132442e.pdf .Accessed 14/12/2014

UNESCO. 2005. *Operational Guidelines for the Implementation of the World Heritage Convention.* World Heritage Centre. Available from: http://whc.unesco.org/archive/opguide05-en.pdf .Accessed 10/11/2014

UNESCO. 2006. *Ironbridge Gorge World Heritage Site. First Cycle: Periodic Report (Section II).* State of Conservation of World Heritage Properties in Europe. World Heritage Centre. Available from: http://whc.unesco.org/archive/periodicreporting/EUR/cycle01/section2/371-summary.pdf .Accessed 12/03/2015.

UNESCO. 2007. *Periodic Report and Action Plan, Europe 2005-2006*. World Heritage Centre. Paper Series n°20. January 2007. World Heritage Centre. Available from: http://whc.unesco.org/document/8748 .Accessed 06/12/2014

UNESCO. 2008. *State of Conservation*. Old City of Jerusalem and its Walls (Jerusalem (Site proposed by Jordan). World Heritage Centre. Available from: http://whc.unesco.org/en/soc/805 .Accessed 21/04/2015

UNESCO. 2009. *State of Conservation*. Old City of Jerusalem and its Walls (Jerusalem (Site proposed by Jordan). World Heritage Centre. Available from: http://whc.unesco.org/en/soc/621 .Accessed 21/04/2015

UNESCO. 2010. *State of Conservation*. Old City of Jerusalem and its Walls (Jerusalem (Site proposed by Jordan). World Heritage Centre. Available from: http://whc.unesco.org/en/soc/454 .Accessed 21/04/2015

UNESCO. 2012. *Sharing best practices in World Heritage management*. Published April 2012. World Heritage Centre. Available from: https://whc.unesco.org/en/recognition-of-best-practices/ Accessed 03/03/2015.

UNESCO. 2013a. *World Heritage Resource Manual: Managing Cultural World Heritage*. UNESCO / ICCROM / ICOMOS / IUCN. Published in 2013 by the United Nations Educational, Scientific and Cultural Organization. Available from: http://whc.unesco.org/en/managing-cultural-world-heritage/ .Accessed 03/11/2014.

UNESCO. 2013b. *Adoption of retrospective Statements of Outstanding Universal Value*. WHC-13/37.COM/8E. World Heritage Committee. Thirty-seventh session. Phnom Penh, Cambodia 16 – 27 June 2013. P284-6.

UNESCO. 2013c. *Understanding World Heritage in Asia and the Pacific - The Second Cycle of Periodic Reporting 2010-2012*. n°35 . February 2013. World Heritage Centre. Available from: http://whc.unesco.org/en/series/35/ .Accessed 26/11/2014

UNESCO. 2013d. *UNESCO Draft Medium Term Strategy*. 2014-2021. Available from: http://unesdoc.unesco.org/images/0022/002200/220031e.pdf .Accessed 02/01/2016

UNESCO. 2015. *Operational Guidelines for the Implementation of the World Heritage Convention.* WHC.15/01. 8 July 2015. World Heritage Centre. Available from: http://whc.unesco.org/document/137844 .Accessed 11/12/2016.

UNESCO. 2016a. *Ironbridge Gorge*. World Heritage Centre. World Heritage Centre. Available from: http://whc.unesco.org/en/list/371 .Accessed 02/10/2016.

UNESCO. 2016b. *World Heritage in Europe Today.* United Nations Educational, Scientific and Cultural Organization (UNESCO). Authors: Pierre Galland, Katri Lisitzin, Anatole Oudaille-Diethardt and Christopher Young. Available from: http://unesdoc.unesco.org/images/0024/002436/243680e.pdf Accessed 24/02/2016.

UNESCO. 2016c. *Global Strategy*. UNESCO World Heritage Centre. Available from: http://whc.unesco.org/en/globalstrategy/ .Accessed 07/04/2016.

UNESCO 2016d. *Education 2030: Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4*. Available from: http://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf .Accessed 04/03/2018.

UNESCO. 2016d. *World Heritage List: Transboundary Properties*. UNESCO World Heritage Centre. Available from: http://whc.unesco.org/en/list/?&transboundary=1 .Accessed 13/02/2016.

UNESCO. 2018. *The List*. UNESCO World Heritage Centre. Available from: http://whc.unesco.org/en/list/ .Accessed 23/07/2018.

UNESCO Bangkok.2008.*Seeing with Young Eyes: Third Sub-regional South-East Asian Teacher Training Workshop on Using Art to Teach about World Heritage*. Penang, Malaysia, 15-21 January 2006. Published March 2008. UNESCO Bangkok. Srithip Printing (Thailand) Co., Ltd. Thailand.

UNESCO UK. 2015. *UK's World Heritage Sites seen in a new light*. Published October 13th 2015. Available from: http://www.unesco.org.uk/news/uks-world-heritage-sites-seen-in-a-new-light/ .Accessed 04/04/2016.

UNESCO UK. 2016a. *Wider value of UNESCO to the UK. 2014-15. Contribution of UNESCO to UK organisations.* UK National Commission for UNESCO. Published November 2015/January 2016.

Available from: http://www.unesco.org.uk/wp-content/uploads/2016/02/UK-National-Commission-for-UNESCO_Wider-Value-of-UNESCO-to-the-UK_UK-Organisations_January-2016.compressed.pdf .Accessed 12/02/2016.

UNESCO UK. 2016b. *Wider value of UNESCO to the UK. 2014-15. Contribution of UNESCO to UK Government policy.* UK National Commission for UNESCO. Published November 2015/January 2016.Available from: http://www.unesco.org.uk/wp-content/uploads/2016/02/UK-National-Commission-for-UNESCO_Wider-Value-of-UNESCO-to-the-UK_UK-Government-Policy_January-2016.compressed.pdf .Accessed 12/02/2016.

UNESCO UK. 2018. *Powering education through 3D scans of Forth Bridge*. Available from: https://www.unesco.org.uk/news/powering-education-through-3d-scans-of-forth-bridge/ . Accessed 06/06/18.

UNESCO Institute for Statistics (UIS) and UNICEF. 2015. *Fixing the Broken Promise of Education for All: Findings from the Global Initiative on Out-of-School Children*. Montreal: UIS. Available from: http://allinschool.org/wp-content/uploads/2015/01/Fixing-the-Broken-Promise-of-Education-For-All-full-report.pdf .Accessed 20/01/2015

University of Birmingham. 2014. *Fully-Funded PhD Opportunities in Cultural Heritage / World Heritage*. Posted on 09 May 2014. Available from: https://www.birmingham.ac.uk/schools/historycultures/departments/ironbridge/news/2014/ahrc-studentships.aspx .Accessed 11/03/2018.

US/ICOMOS. 2016. *U.S World Heritage Gap Study Report*. Available from: https://issuu.com/usicomos/docs/icom001_1603_gapstudyidlayout-issuu . Accessed 01/04/2016.

Veldpaus, L. 2015. *Historic urban landscapes: framing the integration of urban and heritage planning in multilevel governance*. PhD Thesis. TU Eindhoven - Bouwstenen no. 207, ISBN: 978-90-386-3916-1. Available from: http://www.researchgate.net/publication/282005137_Historic_urban_landscapes__framing_the_integration_of_urban_and_heritage_planning_in_multilevel_governance. Accessed 30/09/2015

Visit Blaenavon. 2016a. *Youth Ambassadors: The Project*. Blaenavon World Heritage Site. Available from: http://www.visitblaenavon.co.uk/en/Education/YouthAmbassadors/The-Project.aspx .Accessed 15/02/2016.

Visit Blaenavon. 2016b. *Youth Ambassadors: What we do*. Blaenavon World Heritage Site. Available from: http://www.visitblaenavon.co.uk/en/Education/YouthAmbassadors/What-we-do.aspx .Accessed 15/02/2016.

Vitlycke Museum. 2015. *The World Heritage Preschool*. Available from: http://www.vitlyckemuseum.se/en/Vastarvet---natural-and-cultural-heritage-in-West-Sweden/Subsites/Vitlycke-museum/World-heritage/Facts/?btid=episerver_54346 .Accessed 20/12/2015

Vujicic-Lugassy, V and Richon, M. 2008. Articles 27-28: Educational Programmes. In Francesco Francioni (Ed) *The 1972 World Heritage Convention: a Commentary.* Oxford University Press. Pages 325-334.

Wang W, Zhang Y, Han J, Liang P. 2017. Developing teenagers' role consciousness as "world heritage guardians". *Journal of Cultural Heritage Management and Sustainable Development*, Vol. 7 Issue: 2, pp.179-192.

West, B. 1988. The making of the English working past: A critical view of the Ironbridge Gorge Museum. In: Lumley, R. (ed,) *The Museum Time-Machine. Putting Cultures on Display*, Routledge, London. 36-62.

Wheatley, G. 1997. *World Heritage Sites: A Teacher's Guide*. London. English Heritage.

Williams, K. 2005. "The Meaning and Effectiveness of World Heritage Designation in the USA." In *The Politics of World Heritage: Negotiating Tourism and Conservation*, edited by D. Harrison and M. Hitchcock. Clevedon, UK: Channel View, pp. 132-36.

Williams, P. 2011. *Living Histories: Performing Work and Working Lives in the Industrial Museum*. PhD Thesis. Doctor of Philosophy. The University of Leeds School of Performance and Cultural Industries. September 2011. Unpublished.

Williams, R, Zalasiewicz, J and Knevitt, O. 2012. *Young Earth Creationism at the Giant's Causeway: a grave error of judgement.* University of Leicester. Available from: http://leicesterexchanges.com/2012/07/09/young-earth-creationism-at-the-giants-causeway-a-grave-error-of-judgement/ .Accessed 21/04/2015

Wilkinson, T. 1996. Global warning- the designation of Yellowstone one of the first World Heritage Sites. *National Parks* . 70 (3/4). Pages 34-40.

Winter, T. 2007. *Post-Conflict Heritage, Postcolonial Tourism:* Politics and Development at Angkor

London and New York: Routledge.

Wirth, K H. 2010. *Filmen im Unterricht 2.0/Podcastingeducation. Neue Wege der Unesco World Heritage Education im Zeitalter des Dokumentarpodcastings*. KONTEXT. Kunst – Vermittlung – Kulturelle Bildung. Band 7. Tectum Verlag.

Wolff, S. 2004. Ways into the Field and Their Variants, in U Flick, E v Kardorff and I Steinke (Eds), *A Companion to Qualitative Research*. London. Sage. pp195-202.

Woodham, A. 2009. *Museums visiting and social inclusion: the geography of school visits to museums*. PhD Thesis. Department of Geography & School of Museum Studies, University of Leicester. Available from: https://lra.le.ac.uk/bitstream/2381/7894/1/2009woodhamalphd.pdf .Accessed 18/02/2016.

Woodhouse, B. 2014. Ironbridge Trust shows how museums can boost their revenues. *Financial Times.* June 27, 2014. Available from: http://www.ft.com/cms/s/0/21109368-f633-11e3-a038-00144feabdc0.html#axzz3K5sOIQnc .Accessed 26/11/2014

World Heritage Centre Paris, Communication, Education and Partnerships Unit.2014.*Unesco heritage education aims to foster cultural understanding.* 8th June 2014 . Gulf Times. Available from: http://www.gulf-times.com/qatar/178/details/395333/unesco-heritage-education-aims-to-foster-cultural-understanding . Accessed 29/10/2014.

Wragg, A and Somper, J. no date. *Research on visitor and education centres: a methodology for South Essex.* Draft final report to Greengrid. Phase One: Scoping Study. University of Gloucestershire at Cheltenham and Gloucester Countryside and Community Research Unit. Available from: https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCEQFjAAahUKEwj k6vyjso_IAhXIFdsKHU9XBxs&url=http%3A%2F%2Fparklands.greengrid.co.uk%2Fimages%2Fuploads %2Ffiles%2FVisitorCentre_Research-GloucesterReport.doc&usg=AFQjCNH_rHVb8lmUXcqHXgCJuo70P6H70A&cad=rja   .Accessed 20/09/2015

Wuepper, D and Patry, M. 2017. The World Heritage list: Which sites promote the brand? A big data spatial econometrics. *Journal Cultural Economics*. Issue 41. Pages 1-21.

Young, C. 2007. Monitoring and Evaluation in the World Heritage Convention. Edited by Roger White and John Carman. World Heritage: Global Challenges, Local Solutions. Proceedings of a conference at Coalbrookdale, 4-7 May 2006 hosted by the Ironbridge Institute. BAR International Series. 1698. Pages 3-6.

Young, C. 2016. Understanding management in a World Heritage context: key current issues in Europe. *The Historic Environment: Policy & Practice*. 7:2-3, 189-201.

Zarmati, L. 2012. *Teaching History in Australian Museums: Pedagogy and Praxis*. PhD Thesis. Bachelor of Arts, Diploma of Education Master of Philosophy. School of History, Heritage and Society. Faculty of Arts and Education. Deakin University. April 2012. Unpublished.