

“WHICH IS THE TRUTH? IT’S ACTUALLY BOTH OF THEM”: A DESIGN-BASED TEACHING EXPERIMENT USING LEARNING TRAJECTORIES TO ENHANCE IRISH PRIMARY CHILDREN’S EPISTEMIC BELIEFS ABOUT HISTORY

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**A thesis submitted in fulfilment of the requirements for the
award of Doctor of Philosophy**

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June, 2020

DECLARATION

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of a PhD degree is entirely my own work, that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

Signed: *Caitriona Ní Gossáil* (Candidate)

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Date: 15/05/2020

DEDICATION

This thesis is dedicated to the memory of my treasured friend and colleague

Brian Ruane

Ba mhian liom mo mhíle buíochas a ghabháil leat, a Bhriain, as ucht na tacaíochta agus an dea-chomhairle a chur tú orm go seasta.

Is tusa a mhúscail an misneach ionam tabhairt faoin taighde agus é a chur i gcrích.

Ní dhéanfaidh mé dearmad ar an gcineáltas nó ar an ngreann, ar an gcómhrá nó ar an gcomhlúadar riamh.

Beidh mé i gcónaí an-bhuíoch go deo díot.

ACKNOWLEDGEMENTS

“Ar scáth a chéile a mhaireann na daoine” is an ancient Irish proverb that literally means “in each other’s shadow we flourish” and completing this thesis would not have been possible without the help and support of a great many people under whose shadows I certainly flourished. I would like to express my sincere appreciation and gratitude to all of those who have contributed to this thesis and supported me, in one way or another, on this incredible journey.

First and foremost, I was incredibly lucky to have not one, but two dedicated and inspirational thesis supervisors. I would like to thank both Professor Fionnuala Waldron and Dr Therese Dooley who gave their advice and time so willingly and made this PhD journey such a pleasurable and stimulating one. I have learned so much from both of them and their unfailing professionalism, generosity, encouragement and humorous insights kept me going, even when I felt I had no more to give. I would also like to thank my internal and external examiners, Dr Dolores Corcoran, Dr Arthur Chapman and Professor Keith Barton. Despite my initial nervousness, I thoroughly enjoyed the lively and challenging discussion. Sincere thanks too to Professor Catherine Furlong who chaired the Viva Voce and to Dr Kay Maunsell, Dr Charlotte Holland, Dr Siún Nic Mhuiri and Dr Benjamin Mallon for the helpful comments and advice along the way.

I am also indebted to each of the children involved in this study and grateful to them for sharing their insights and opinions so freely with me. My time spent working alongside them was one of the most enjoyable aspects of this research and that was because they were such a humorous, thoughtful and joyful bunch to be with. I would particularly like to thank the children from Cycle 2 who were my own class at a time when I was combining both work and study. Their support, patience, quick wit and genuine interest in what I was doing lifted my spirits every day! I would also like to thank the Board of Management and all the staff of St. Barnabas for granting me permission to conduct this study. My one regret is that our former principal Seamus Murphy (who guided me as a student, a scholar and a teacher), was not here in the end to see the job finished but I know he was so proud of me for starting!

Juggling a full-time lecturing job and a PhD is no easy task and I would like to thank Dr James Lovatt at the School of STEM, Innovation and Global Studies at Dublin City University, who did all he could to make this possible when I became a permanent member of the DCU staff in 2017. His door was always open for words of encouragement, sage advice and friendly chats. I would also like to acknowledge the support of St. Patrick’s College/Dublin City University who awarded me the Michael Jordan Fellowship in 2016, enabling me to make the transition from standing at the top of the primary classroom to sitting once again in the lecture hall. The year I spent on the Fellowship, prior to taking up a lecturing position in history education, allowed me to develop my research skills, participate in

conferences and contribute to the development of the history education modules, all of which have furthered my professional development as an academic.

Conducting PhD research can be a lonely endeavour but I was incredibly lucky to be surrounded by fantastic colleagues and friends at St. Patrick's Campus. I thank them for listening to my numerous presentations and for the words of advice. In particular, I am forever grateful to the other two members of the History Education Team - Peter Whelan and Maria Barry who consistently fill my days with fun and laughs. Their support and generosity knew no bounds during this PhD journey and without the two musketeers by my side, ready to help, to listen to colourful rants and to cover seminars in times of need, this thesis would still be on my fickle laptop! A special thanks to my colleague Hsiao-Ping Hsu whose patience and helpfulness was seriously valued at a time of great need! Also thanks to the ISS staff at St. Patrick's Campus, DCU who were forever on hand to sort out my technical and software issues. A particular thanks to Paul Mazzano from ISS who went above and beyond the call of duty to rescue these precious pages from a corrupted hard drive!

And almost finally, a huge thanks to all my family who have always backed me in everything I do. I will always be grateful to my parents Frank and Angela, who instilled in me a love of knowledge, a passion for history and a belief that nothing was ever too difficult. The same to my sister Michelle, who listened so patiently to things she had absolutely no interest in! Her support, and that of my nephew Jamie and niece Mya (including their impromptu gym sessions) helped me in immeasurable (and sometimes measurable) ways. A special thanks also to the two Cs in my life, Claire and Catherine, who kept me laughing and kept me going. Giorraíonn triúr bóthar!

And finally, this thesis would have been impossible to both begin and finish without the encouragement and unconditional support of the two boys. Heart-filled thanks to Peter for his belief in my capabilities and the correct words of encouragement at the correct times. And my wild child Dannan, who made me laugh (and made me tea) and became a man while I wasn't looking, I thank him for being there to keep me grounded! And, finally, my thanks to Sam who sat either by my side or under my desk, evening after evening and often late into the night, patiently waiting for walks that never happened.

Caitriona

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ABSTRACT

“WHICH IS THE TRUTH? IT’S ACTUALLY BOTH OF THEM”: A DESIGN-BASED TEACHING EXPERIMENT USING LEARNING TRAJECTORIES TO ENHANCE IRISH PRIMARY CHILDREN’S EPISTEMIC BELIEFS ABOUT HISTORY

Built on the hypothesis that some epistemic beliefs can act as bottlenecks to impede conceptual understanding in history, I aimed to find ways in which these could be identified, interrogated and challenged. Over three cycles of a teaching experiment, which is a specific form of design-based research, a sequence of hypothetical learning trajectories (HLTs) was implemented in three Irish primary classrooms. The learning trajectories designed for this study were based on four concepts. These were: multiple perspectives, historical significance, using evidence and historical argumentation.

Retrospective analysis of the first cycle led to the formulation of a new conceptual change model: the Analogical Conceptual Change Model. This was used to underpin the design of the HLTs used in Cycle 2 and 3 of the study. Thematic analysis of each cycle led to the development of a local instruction theory for using historical evidence in the primary classroom. Local instruction theories can be considered as learning routes relating to exemplary instructional activities that can be used to teach for conceptual understanding. They are developed from the design and testing of HLTs.

Findings showed that the ideas students hold about the nature of history are complex, rooted in everyday epistemologies and shift back and forth depending on topic and context. Findings also showed that the efforts of the teaching experiment to integrate current research into a HLT that interrogates children's initial understandings assisted them in moving towards more sophisticated forms of reasoning about historical evidence and the nature of history.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

History, when conceptualised as an act of enquiry, requires students to not only search for and acquire new knowledge but to determine its veracity. This requirement to judge the credibility of information connects the study of history to one of the oldest philosophical disciplines in the Western tradition i.e. epistemology. Epistemology studies the nature of truth and how we acquire, understand and validate knowledge (VanSledright & Maggioni, 2016) and an increasing body of research argues that epistemic cognition plays an influential role, not only in teaching and learning, but also in everyday interactions with new information (Hofer, 2016). Recently, researchers have turned their focus to the role epistemic cognition plays in the understanding of history and have found that student preconceptions about the nature of history, which for the main part are intangible and unconsciously held, may stem from their epistemic beliefs (VanSledright & Maggioni., 2016). A number of studies also indicate that some beliefs may actually act as *bottlenecks* (Middendorf & Pace, 2004) that work towards inhibiting historical understanding (Cercadillo, Chapman, & Lee, 2017; Lee & Ashby, 2000; Limón, 2002; VanSledright, Maggioni, & Reddy, 2011).

Yet, studies also suggest that children are historically aware and display an emergent capacity to think historically about the world (Barton, 1997a; Waldron, 2003). This study focuses on identifying and supporting that emergent understanding by interrogating the relationship between what I term as children's *epistemic bottlenecks* (those preconceptions about historical knowledge that can hinder historical understanding) and their capacity for historical engagement. It is premised on my belief that primary children's emergent understanding of history is not only intrinsically linked to their own epistemic beliefs about knowledge, but that these may be malleable, and subject to change when challenged.

1.2 Research questions

There are two principal objectives for this research and these led to the development of the research questions that underpinned it. Firstly, at a functional level, this study attempts to correlate the relationship between children's emergent conceptualisations of history as a discipline and their engagement with historical evidence and secondly, it seeks to contribute towards the development of a *local instruction theory* to identify and challenge the epistemic bottlenecks that can inhibit

historical understanding. In the context of mathematics education, empirically tested, researcher-designed local instruction theories are used as a framework of reference for designing and engaging students in a set of exemplary instructional activities (Gravemeijer, 2004). These can then be used by teachers to plan classroom teaching for conceptual understanding. This study investigates how local instruction frameworks can support the teaching of history in primary classrooms by promoting progression in historical understanding.

While this thesis is situated around children's thinking rather than that of teachers, it is also driven by a desire to improve teacher practice and these objectives are reflected in the research questions:

- What epistemic bottlenecks inhibit the understanding of historical evidence?
- What approaches can support overcoming these epistemic bottlenecks?

These research questions were initially prompted by my experiences as a history co-ordinator at St Barnabas' Primary School, Dublin. From talking with my students, it became apparent that many senior primary children were unclear about what history was despite having studied it for several years. Even more surprising was a similar lack of clarity amongst the teachers. This lack of clarity had an effect on how both students and teachers approached and engaged with the discipline. For history teaching to be purposeful, teachers need to be aware of why they teach it, as such understanding contributes to both how and what they teach. The following section sets the context for this study by exploring international discourse around purpose in history teaching. This is followed by an overview of the evolution of history education in Ireland in relation to both purpose and practice. The chapter then reflects on current debates in Irish education regarding the teaching of history. It then considers the connections between historical thinking, epistemology and conceptual change. Finally, the chapter outlines the importance of the study for the teaching of history in primary contexts.

1.3 The evolving purpose of history in education

History is, as Koren and Baranović (2009) argue, a socially constructed form of knowledge that is often concerned with the transmission of key civic competencies such as tradition, identity and values. Inevitably, questions arise concerning which traditions, what values and whose identities are transmitted (Barton & Levstik, 2004). Further complicating an understanding of the purpose of history education are debates around how these are communicated in educational contexts. These ongoing debates can be summarised as falling between the positions

of history as an academic discipline or history as the means to encourage participative and democratic citizens (Carretero & Bermudez, 2012). While Barton and Levstik (2004) point out that such debates fail to consider the complex and multifaceted opportunities the teaching of history affords, it is useful to briefly deliberate on them as they highlight powerful underlying epistemological assumptions about the purpose and nature of history, assumptions that are often filtered in to the collective consciousness through schooling (Lowenthal, 1998; Seixas, 2000; Waldron & Pike, 2006).

In recent decades, the teaching of history has seen a move towards a disciplinary approach which favours historical thinking as a means to achieve historical understanding. This approach supports the use of historical sources to allow students to construct their own interpretation of evidence through a process of active analysis and synthesis (Seixas, 2018; Wineburg, 2001). In doing so, the aim is not to develop “miniature-historians” (Lee & Ashby, 2000, p. 200) but rather to develop historical “habits of mind” that allow for the development of independent and autonomous thought (Seixas, 2004). Many proponents of this approach argue that the disciplinary method, grounded in enquiry-based pedagogy, has its own intrinsic value, particularly the fostering of perspective-taking through the examination of multiple and often conflicting sources (Laville, 2004; Lee, 2004).

Furthermore, they argue that the qualities developed through the requirements of historical thinking have an inherent transferability that enhances higher-order thinking skills such as critical interpretation and reasoned argumentation. Skills such as these are brought to bear on an individual’s capacity to distinguish between competing truth claims. These practices, it is argued, allow for the consideration of differing opinions as well as the ability to reflect on the reliability and credibility of sources (Yeager & Foster, 2001). Those who promote the teaching of history with an emphasis on disciplinary skills often focus on the mastery of competencies that demonstrate elements of analytic and cognitive reasoning (Bellino & Selman, 2012). Following this line of argument, history education’s purpose can be incorporated into the broader goal of developing in students the capacity to think critically about the world in which they live.

In addition, some eschew the moral and subjective elements of the subject and maintain that emotions and moral judgments are distinct and separate from critical thinking (Selman & Barr, 2009). Boix-Mansilla, for example, argues that the infusion of moral or civic goals into the teaching of history actually has the potential

to undermine historical understanding (2000). Others too, question the inclusion of ethical judgments in the tools of historical analysis. Emotionally charged historical opinions, Lee and Shemilt (2007) contend, may carry the risk of judging the past from the assumption that historical actors subscribed to the social and moral mores of present society. This, it is argued, contributes towards heightening the development of predominantly subjective attitudes in place of a more critical analysis of evidence (Boix-Mansilla, 2000).

Challenging this perspective, Virta and Kouki (2014) maintain that moral, ethical issues cannot be avoided in the study of history because it is a subject that deals primarily with the human experience over time. Likewise, Bellino and Selman (2012) argue that the study of history is, in fact, grounded in the socio-emotional features of empathic processes. Empathy, as a historical construct, is premised on an understanding of historical knowledge which allows for the acknowledgement of the shared experiences of past and present actors. Foster and Yeager define it as “a considered and active process” (1998, p. 12) that enables students to make the creative leap between the analysis of historical evidence and what may be inferred from it while simultaneously taking account of context and human motivation. Likewise, Cooper emphasises the role of history in the formation of a moral awareness that allows students to question, speculate and discuss reasons for people’s attitudes, values and behaviours, particularly in contexts that are different to their own (1992).

In line with this form of reasoning, Barton & Levstik (2004) argue that history should be taught in a manner that develops the skills and attitudes needed to live in participative and deliberative democracies. Advocating a civics-framed approach to teaching history, they maintain that a study of the past should purposely include an element of ethical reflection (see also Levstik & Thornton, 2018). Studying the past, they argue, supports the development of democratic communities through promoting an understanding of historical agency, the ability to act upon the world as a historical/social actor (Barton, 1997a). By critically examining how historical actors brought about change in societies in the past, students can begin to understand their individual roles as social actors in the present and how they can contribute to their own communities both now and in the future. Driving this perspective is the belief that history education should evoke “deliberation over the common good” (Barton & Levstik, 2004, p. 38).

Consideration of the choices and decisions of the past also enhances children's historical consciousness. Historical consciousness can be broadly defined as the process by which people orient themselves in time; this orientation allowing a person to situate and direct themselves within a historical and temporal continuum (Rüsen, 2005). This, largely speaking, enables the examination of present-day issues and the anticipation of future ones with a deeper awareness of what has gone before. Understanding how the decisions people made in the past can impact on society today, and understanding that present actions will have implications for future generations is, as Von Heyking argues, one of history education's essential contributions to society (2004).

1.4 The evolving purpose of history education in Ireland

The current IPHC effectively balances the debates surrounding the purpose of history education through the promotion of critical reflection on Irish society and events of the past. This is achieved through the development of discipline-specific historical skills and concepts which allow children to critically appraise local, national and international events (National Council for Curriculum and Assessment, (NCCA) 1999a). The present curriculum, influenced by enquiry-based approaches to the study of history, represents a departure from what McCully and Waldron describe as the "agreed national story" and the idea of "a privileged national identity" (2013, p.150) that permeated the teaching of history since the beginning of the Irish State in the 1920s. To understand why there was such a massive shift from an intensely nationalist focus in previous curricula to a multicultural syllabus that acknowledges the multiplicity of identities (Waldron & Pike, 2006), questions need to be asked on the role the state has played in the development of history education. The following section sets out the context of this study by outlining the role of history education since the beginning of the national school system. In doing so, the state's educational response to post-colonial, post-conflict, post-national and post-traditional issues is explored through the uses (and at times abuses) of school history (Doherty, 1996).

1.5 History education in Ireland- The story of a swinging pendulum

Horgan and Douglas (2001) liken the history of education in Ireland to that of a swinging pendulum, a powerful metaphor which succinctly describes the various oscillations Irish primary education has experienced since its' beginnings in 1831. The curriculum swung from a traditional, didactic approach in the 1830s to one of holistic, child-centeredness in the early 1900s. It swung back to traditionalism with

the formation of the Free State¹ in the 1920s and then forward again in the early 1970s. That the swing of the curricular pendulum was manipulated by the forces of the changing political, social and economic landscape is of no great surprise, and this was particularly evident in the treatment of history as a subject in the primary school curriculum. In order to appreciate the decisions that were taken on the issue of school history, it is important to briefly sketch the historical context from which the national system of primary education emerged.

Following the Act of Union², which came into effect in January 1801, Ireland became part of the United Kingdom and executive power was transferred to the Lord Lieutenant of Ireland and the Chief Secretary for Ireland, both appointed by the British government. The Irish Parliament was closed and elected Irish Members of Parliament took their seats in the House of Commons at Westminster in London (Foster, 1989). It was in this political context that the Irish national education system³ was established in 1831. Founded with the aim of providing an education to the poor of Ireland, the national school system was also a response to the range of contentious cultural, political and religious issues which dominated Irish society (Walsh, 2016). Ireland was a deeply divided society both politically and denominationally and this played a significant part in the construction of the national programme for education. A distinct feature of the system was its effort to address problematic religious and political issues through a process of cultural assimilation and political socialisation (Coolahan, 1981). Through this process of cultivating a homogeneous and British identity loyal to the British Crown, the national education system hoped to create a literate, numerate, and therefore, employable workforce to suit the industrial and agrarian needs of the British economy (Walsh, 2016). Given these ideological aspirations, the teaching of history was viewed as problematic from the very beginning. Recognition was given to the potential and power of history to promote Irish nationalism and undermine allegiance to the Crown and so it was not considered a core subject of the Programme for Instruction until the turn of the century (Walsh, 2016).

¹ The Irish Free State was the name given to post-independence Ireland from 1922 to 1937.

² The Act of Union was created following the 1798 Rebellion and effectively ended the Irish parliament in 1800. Ireland became part of the United Kingdom in 1801. The Dublin based Parliament at College Green was closed and Irish Members of Parliament conducted their business in London.

³ The national school system of education set up in Ireland in 1831 was one of the first of its kind in Europe and was established 41 years before the English system.

History education, as discussed in Section 1.3, is often regarded as the channel through which a nation instils and reinforces the defining narratives of national identity and nationhood. This was particularly evident following independence from Britain and the establishment of the Irish Free State in the south of Ireland in 1922. Reflecting the political interest of the new Free State government, the school curriculum promoted and imparted a version of Irish history which gave legitimacy to the new political establishment. The purpose of the newly-formed Department of Education (DoE) was to “work with all its might for the strengthening of the national fibre by giving the language, history, music and tradition of Ireland their natural place in the life of Irish schools” (DoE, as cited in Walsh, 2016, p. 5). Given that second-level education was non-compulsory and limited to those with means, primary school history became “a state-building project” (McCully & Waldron, 2013, p. 148) which glorified the heroes of 1916⁴ and embraced the idea of a uniquely Gaelic nation (Coolahan, 1981).

The year 1966 saw nationwide celebrations of the 50th anniversary of the Easter Rising, a pivotal moment in the road to Irish independence. It was also the year which saw the first casualties of the modern era of the Troubles⁵ and the same year that a study group on primary education found that the teaching of history in Irish primary schools “over emphasised sublime patriotism and self-sacrifice” (McElligott, 2001, p. 119). Concerns over the content of the primary history programme were reiterated in a sequence of intense Dáil (parliamentary) debates throughout the 1960s where deputies claimed that the strong nationalistic overtones of the history curriculum, and textbooks in particular, cultivated in children a hatred of all things British (Magee, 1970). The eruption of the Troubles in Northern Ireland also called into question the overtly nationalist overtones that permeated primary history teaching since the foundation of the state (McCully & Waldron, 2013). The report of the study group proposed a new departure for history education and recommended an emphasis on historical concepts and processes and a turn to social, economic and local history (McCully & Waldron, 2013).

⁴ The Easter Rising was an armed rebellion that took place in Ireland during Easter Week, April 1916. The Rising took place with the objective of ending British rule in Ireland and the establishment of an independent Irish Republic. At the time, the United Kingdom was engaged in the First World War. Sixteen of the leaders of the rebellion were executed in May 1916.

⁵ The Troubles is the name given to the conflict between Nationalists and Loyalists in Northern Ireland from the 1960s until 1998. The conflict was initiated by the demand for civil rights and ended with the signing of the Good Friday Agreement. This led to a power sharing executive involving representatives from both sides of the community.

With paramilitary violence escalating in the north and negotiations with the European Economic Community beginning in the south, Irish identity was in a process of transition. This political and international context played a large part in the development of the 1971 Primary School Curriculum known as *Curaclam na Bunscoile* (CnaB) (DoE, 1971a; 1971b). The launch of CnaB as a child-centred, locally contextualized and activity-based curriculum saw an emphasis on historical investigations of the local area and the use of sources in the classroom. While Tormey's assessment of CnaB (2006) found that the history curriculum was still quite explicit in its use of history as part of a cultural nationalist project, Waldron termed it as a "real, if tentative, step towards a more inclusive view of national history" (2003, p. 63).

International research since the 1970s has provided history educators with a more robust understanding of the cognitive capacities of children and the last few decades have witnessed a revolution in the teaching of history. Across the globe, curricula have been reshaped to reflect this (Von Heyking, 2004; Seixas, 1993). A prime example of this reshaping is the Irish Primary School Curriculum (NCCA, 1999); launched in September 1999 to replace CnaB. In many respects, the primary history curriculum of 1999 reflects several of the aspirations of its predecessor in that it is explicitly child-centred and promotes a constructivist and integrative approach to teaching and learning. The traditional canon of national history, which formed the bulk of the content of previous history curricula, is still present; however, it is bounded within an ideological frame of multiple perspectives and identities which promotes openness to others and mutual respect. Described by Tormey as "globalised" (2006, p. 312), the 1999 history curriculum can be seen as the Irish state's educational response to the peace process, the growing affiliation with Europe and the increased diversification of Irish society (Waldron & McCully, 2016).

Influenced by the "New History" movement in the United Kingdom (Tormey, 2006), the current Irish Primary History Curriculum (IPHC) embraces the idea that students should be introduced to history as a discipline with its own characteristic ways of investigating and making sense of the human experience of the past. Advocating an enquiry-based framework for school history that favours the investigation of events using evidence, the focus is on engaging the child in analysing sources and identifying how historical claims are constructed (NCCA, 1999b). This reshaping of the study of history is particularly evident in how the primary history curriculum defines history education. CnaB (1971b) imagined

children learning about the past as engaging “with historical matter but not according to the discipline of the scholar” (DE, 1971b, p. 87). The current curriculum, though still concerned with the learning of “historical matter” also emphasises the importance of children engaging in with the interpretative nature of history by experiencing “something of the way in which historians go about their work” (NCCA, 1999b, p. 2).

This focus on both skills development and historical content is central to what Tormey (2006) refers to as a “process of reflexivity” (p. 316) which is reflective of both identity construction and the late-modern experience of national identity. According to Tormey (2006), the current history curriculum is an exercise in “the boundless self” as the previous emphasis on patriotism has shifted to one of multiple identities. As Giddens proposes, a move to a post-traditional culture leads people to understand self-identity as a reflexive project in which individuals actively construct and reflect on their own biographical narratives rather than simply inheriting these from dominant national ones (1991). The language of the IPHC documents provides for this increased reflexivity and promotes the development of decision-making skills and critical thinking through an exploration of how “people’s interpretations of the past can exert a powerful influence on their attitudes, beliefs and actions today” (NCCA, 1999b p. 9).

To summarise, history education in Ireland has always been enmeshed in issues of nationhood and has largely mirrored the growth of the nation-state. Essentially ignored by nineteenth-century educators, it became a tool to legitimise the newly founded Irish Free State of the 1920s and was used in schools to create a common, but essentially “imagined” cultural community that was white, settled, Catholic and Gaelic (Parker-Jenkins & Masterson, 2013). As the state moved to maturity, the goals of school history shifted from the legitimisation of the nation to a critique of the national story. Explicit nationalism was stripped away and replaced with a more European and global outlook and the focus shifted from the construction to the deconstruction of those narratives that once defined the Irish.

1.6 Current debates in Irish history education

With a shift in the IPHC towards children “working as historians”, the Decade of Centenaries (DoC), a ten year, national commemoration programme which began in 2012, provided a ripe opportunity for Irish primary students to engage in authentic, evidence-based studies of a controversial and troublesome history. Waldron and McCully (2013) note that the DoC also provided the space for a

critical discussion on issues of identity, conflict and reconciliation. Historian Diarmaid Ferriter, alluding to the controversial and contested nature of the centenaries being celebrated, claimed it was a chance for students to “debunk myths and challenge inaccuracies as well as deliberate amnesia and invented versions of the past” (2013). The Decade provided the opportunity for students to not so much celebrate the nation, but “study the nation’s celebrations” (Nora, 1996, p. 7), yet to what extent has the DoC, now in its eighth year, provided opportunities for primary children to engage in such studies?

The “Commemorate, Celebrate, Imagine” programme (Naughton, 2015) launched by the Department of Education and Science (DES) to commemorate the centrepiece of the Decade, the 1916 Rising, may give some indication. The programme itself consisted of a year-long number of competitions and initiatives in history, art, drama, poetry, dance and song. The tri-colour - the national flag, was hand-delivered by the Irish Army to each school and senior classes were asked to rewrite the Proclamation of 1916 to suit modern Ireland. However, as Waldron notes, the centenary programme for primary schools was in closer alignment to the citizenship strand of the Social Personal and Health Education (SPHE) curriculum than the IPHC. Locating the programme within this strand promoted the more celebratory aspects of commemoration and provided limited opportunities for critical, historical engagement (2015). Changing views of children as learners and changing views of school history, such as those outlined in the IPHC (NCCA, 1999a), positions students as generators rather than consumers of historical knowledge. Yet despite this shift in focus, the DES programme for 2016 emphasised traditional narratives and militaristic pomp and the focus remained very much on celebrating the nation rather than studying “the nation’s celebrations” (Nora, 1996, p. 7). The centenary programme seemed to downplay the historical capabilities the IPHC itself supports, leaving an overwhelming sense of an opportunity to engage in authentic historical critique lost.

While questions may be asked about whether the DES programme reflected the aims and objectives of the primary history curriculum, public engagement with the commemoration of 1916 was exceptional (Ferriter, 2018a). It was therefore something of a paradox that at this juncture in time that the place of history in both primary and post-primary schools came under serious threat. Despite objections from historians, teachers and the general public (Ferriter, 2018b), a new specification for Ireland’s second-level junior cycle history was introduced in 2018. History, a

compulsory requirement in most secondary schools since the 1920s (McCully & Waldron, 2013), became one of nine optional ones that schools could choose to select or reject as a unit of study (NCCA, 2015). In October 2019, following serious criticism in both public and academic spheres, this decision was reversed by the Minister for Education and special mandatory status was accorded to the subject (Donnelly, 2019). However, the significant changes proposed for education at primary level, which include restructuring the primary curriculum; the introduction of new curricular subjects; a growing push for science, technology, engineering and mathematics (STEM) education (Grayson, Houghton, O'Donnell, & Sargent, 2014) and what Burke and Welsch describe as a “visible shift in priority to two areas of learning – literacy and numeracy” (2018, p. 33) have led to concerns over the future of subjects such as history as a core component of the primary curriculum.

The rapid social, economic and technological transformations Irish society has experienced in the last few decades, has placed significant demands on a population facing an ever-evolving and uncertain future. While this has led to calls for Irish primary and post-primary curricula to promote STEM subjects (NCCA, 2018), the capacity of history to respond to these demands has been largely ignored. These are challenging and changing times but the skills that students require are not new. Argumentation and problem-solving have always played a part in human progress, and school history, when focused on interpretation through the investigation of evidence, provides an obvious and already existing space to develop such skills. Despite this, calls for the promotion of digital competencies and coding skills at primary level persist, leaving Irish education, and the subject of history in particular, once again at a crossroads as the curricular pendulum is swayed by the forces of the changing political, social and economic landscape.

1.7 Connecting historical thinking, epistemology and conceptual change

Prior to developments in the early seventies and eighties, a transmission mode of history education in schools was considered the norm in most jurisdictions (Bourdillon, 2013). The focus was on content (sometimes referred to as the substantive element of history) and history lessons often consisted of the learning of facts about the past in a chronological narrative. The ability to memorise and recall those facts was generally considered a demonstration of historical understanding (Bourdillon, 2013). Research since then has established that historical understanding requires not only a knowledge of the substantive elements of history but also the use of a set of domain-specific cognitive strategies. These are often referred to as the

procedural elements of the discipline. Applying these procedural strategies to studies of the past is frequently referred to as “historical thinking” (Parkes & Donnelly, 2014). Influenced by educational and cognitive development theories, “historical thinking” materialised as a label used by history educators to reject the notion of history as simply an exercise in memory and recall. These procedural strategies can be considered as the conceptual tools of the historian and include concepts such as causation, progress and decline, continuity and change, empathy, contextualization, accounts, evidence, and historical perspective (VanSledright, 2014).

The School's Council History Project (SCHP), founded in the UK in 1973, played an important role in shaping this approach to the teaching of history. Guided by the belief that young people could learn to reason about history in complex and sophisticated ways, the SCHP, taking its cue from developments in academic history, was influential in orchestrating the shift away from rote learning and towards focused historical enquiries which allowed students to engage with and reason about historical sources (Bourdillion, 2013). The work undertaken by SCHP was further consolidated by another UK based research endeavour, Project CHATA (Concepts of History and Teaching Approaches), which sought to map changes in students' ideas about history (Lee & Ashby, 2000). Its research indicated that the ideas children have about the nature and justification of historical knowledge play a large part in both their learning experiences and approaches to the discipline of history. Furthermore, these findings showed that while some beliefs can contribute to a deep understanding of the past, others are inclined to restrict the learning process (Lee & Shemilt, 2003). As Lee (1991, p. 48-49) argues:

[it is] absurd ... to say that schoolchildren know any history if they have no understanding of how historical knowledge is attained, its relationship to evidence, and the way in which historians arbitrate between competing or contradictory claims. The ability to recall accounts without any understanding of the problems involved in constructing them or the criteria involved in evaluating them has nothing historical about it.

In this statement, Lee manages to capture the relationship between historical understanding and epistemology. Students, he argues, need a conceptual understanding of the disciplinary features of the subject; central to this understanding is an awareness of how knowledge of the past is constructed, adjudicated and arbitrated. Couched in this assertion is the implication that this knowledge is much more than information acquisition and retrieval, it is knowledge that allows for

“more powerful” ways of understanding the past (Lee & Ashby, 2000, p. 216). These powerful ways of understanding the past, though not labelled as such at the time, are of an epistemic nature. Maggioni, Alexander and VanSledright (2004) define epistemic beliefs as “the cognitive process enabling individuals to consider the criteria, limits, and certainty of knowing” (p. 188). It is argued that those who exhibit a sophisticated epistemic position express the ability to “coordinate the objective and subjective dimensions of knowing and knowledge” (Kuhn, Cheney, & Weinstock, 2000, p. 310) and there is a sizeable amount of empirical support for the role epistemic beliefs play in students’ learning. These studies indicate that sophisticated epistemic beliefs encourage increased goal orientation and motivation (Bråten & Strømsø, 2004); the use of deep learning strategies (Dahl, Bals, & Turi, 2005) and can act as predictors of performance (Schommer & Walker, 1995).

Those epistemic beliefs that are specific to history have been the focus of increased research interest in the last few decades (Lee & Shemilt, 2003; Maggioni, VanSledright, & Alexander 2004; Maggioni, Fox, & Alexander, 2010; Nokes, 2014). This research suggests that in the learning of history, naive epistemic beliefs are often compatible with an uncritical and fixed view of the past while more sophisticated beliefs correspond with the perception that history is an interpretation of the past based on the evaluation of multiple sources of evidence (Seixas, 2004). This capacity to evaluate and assess a variety of interpretations of past events can prime students to negotiate an information-driven society where multiple voices compete for consideration. The development of more sophisticated epistemic beliefs in students is not only central to the learning of history but also to the development of autonomous and critical thinkers that can develop a considered analysis of past and contemporary events.

That researchers’ interest in students’ beliefs about knowledge and their ability to judge the veracity of competing claims has increased contemporaneously with the growing influence of digital technologies on the lives of children and society in general, is no real coincidence. We live in an age where an abundance of information is readily available at our fingertips. Today’s students are bombarded with a wealth of information from many sources. This easy access, though of huge benefit to learning, poses numerous challenges. Often described as “digitally native” (Prensky, 2001) in many ways students are digitally naive and, as the increasingly worrying trend of fake news indicates, deciding what information is reliable and

knowing how to validate claims is a cognitively taxing endeavour, an endeavour that is assumed to be guided by students' epistemic beliefs (Rose, 2019).

1.8 The importance of this study

If educators are to involve students in a meaningful study of history then there is a need to know what children already know about the subject, where this knowledge originates and how it is organised and applied. Children enter the classroom with prior experiences and ideas about history which influence what and how they learn (Levstik & Barton, 2005; Barton 1997c). In fact, some research suggests that learning is influenced as much by children's pre-existing theories as by the new teaching (Donovan, & Bransford, 2005). Attention needs to be paid to this essential feature of the learning process because if such preconceptions are not challenged, children may fail to correctly grasp new concepts or find history impossible altogether (Lee & Shemilt, 2004).

The last decade has seen significant progress made in understanding how epistemic cognition may be promoted in the classroom and a series of instructional models have been developed to assist this. These include the dialogic teaching model (Reznitskaya & Gregory, 2013), the 3R – reflection, reflexive thinking, resolution model (Brownlee, Ferguson, & Ryan, 2017) and the PACES – pedagogy, authority, curriculum, evaluation, support model (Muis, Chevrier, & Singh, 2018). However, these models are complex in design and advocate a multi-componential approach which would require fundamentally different classrooms and curricula to become a usable feature in the teachers' toolkit (Greene, Sandoval, & Bråten, 2016). This study attempts to bridge the gap between research and practice by providing a useable, empirically tested model for classroom use.

Research into epistemic beliefs and learning strategies is gaining popularity in the field of education but many of these studies are situated around the beliefs of older adolescents and adults (Maggioni et al., 2004; Moschner, Anschuetz, Wernke, & Wagener, 2008; VanSledright et al., 2011) with relatively few dealing with younger populations. While there has been some research into students' beliefs about history (see Havekes, Aardema, & de Vries, 2010; Wineburg, 2001, Bain, 2005) of those that do, an even smaller number focus on primary aged children (Barton, 1997a; 1997b; 1997c; 2001; 2008; Levstik & Barton, 1996; 2005; Lee & Shemilt, 2003; Lee & Ashby, 2000; Lee, Dickinson, & Ashby, 1996) and fewer again focus on specific intervention studies (Nokes, 2014; VanSledright, 2002). As Barton (2008) notes, research on student ideas about history tends to either compare the

progression of student ideas at various stages or focus on how these ideas have changed before and after an intervention. While such studies provide much-needed information on the directions students may take, they offer “limited information on the nature of the journey” (p. 249). Despite the call for further research in this area, there remains a gap in the research conducted internationally and no studies have been conducted in the Irish context. This research aims to close this gap by designing and testing a series of intervention lessons devised to interrogate and challenge children’s epistemic bottlenecks about history.

To do this, I employ a *teaching experiment* (which is a specific form of design-based research) to assess the effectiveness of a series of teaching interventions developed to uncover and address student preconceptions about the nature of history, historical knowledge and evidence. This methodology is employed as it allows the researcher to experience, at first hand, students’ learning and reasoning. Teaching experiments enable researchers to test hypotheses about how students learn and reason within the classroom environment and allow them to trace the nature of the journeys students may take. Throughout the course of a series of teaching episodes, new hypotheses are usually formulated. These hypotheses are tested through observing and recording data (Steffe & Thompson, 2000). These data in turn, furnish deeper understandings of the means by which students construct concepts. The data collected then informs the development of further teaching episodes and can contribute to the development of a local instruction theory.

Supported by a framework based on conceptual change, the effects of the teaching interventions are explored in relation to students’ (a) epistemic beliefs relating to historical knowledge and (b) their ability to use historical evidence. Conceptual change is generally defined as a type of learning that is focused on transforming an existing conception (i.e. a belief, idea, or a way of thinking). This focus is what sets conceptual change apart from other types of learning as the existing conception is changed or replaced and the new concept becomes the framework that students use (Posner, Strike, Hewson, & Gertzog, 1982). This study uses a modified version of Stepan’s Conceptual Change Model (1996) to plan and deliver a series of intervention lessons aimed at challenging Irish primary school children’s epistemic beliefs about the nature of history and historical evidence.

1.9 Conclusion

This introductory chapter sought to encapsulate the on-going debates and issues concerning history education in Ireland and to provide a contextually based

rationale for this research study by drawing on existing research. Chapter Two provides a review of the literature relating to history education, historical thinking, historical consciousness, epistemic beliefs, and conceptual change. This chapter also proposes a framework for bringing these elements together to create a local instruction theory for designing tasks to develop children's understanding of historical evidence. Chapter Three provides a detailed description of the methodological approach used and outlines the theories and philosophical underpinnings of this study. Chapter Four details the methods, instruments and provides an overview of how the study was enacted. Chapters Five and Six present a detailed analysis of the children's responses to the interventions. Chapter Seven presents the outputs that arose from this study which include the Analogical Conceptual Change Model, the Local Instruction Theory for Using Historical Evidence and the hypothetical learning trajectories that underpinned this. The chapter ends with the identification of four design principles that emerged from the analysis of the data. The thesis concludes with a synthesis of this analysis in Chapter Eight. Chapter Eight also discusses the implications for teaching history as a result of these findings and provides suggestions for future research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter is framed around five key themes which are central to situating this research study. The first of these highlights relevant research relating to children's capacity to engage with historical evidence. The second outlines the foundational theories that underpin the teaching interventions developed in this thesis. Building on this, the third theme examines the theoretical underpinnings of a proposed pedagogy for teaching and learning history. In considering, I draw on a number of bodies of literature from historical consciousness, historical enquiry and historical thinking and theorize how these may be utilised for teaching children about the historical past in meaningful contexts. The fourth theme considers research in the field of epistemology and pays particular attention to children's epistemic beliefs about the nature of history and whether these play a part in students' capacities for historical understanding. The final theme brings all these elements together by recommending local instruction theories as a pedagogical intervention for teaching for a conceptual understanding of historical knowledge and evidence.

2.2 Children's capacity to think historically

Frequently, public discourse claims that young people today do not know any history, citing lack of content knowledge as proof of this (Lee & Ashby, 2000; Lowenthal, 1998; Wineburg, 2001). As Foster, Ashby and Lee (2008) contend, this is a weak conceptualisation of historical competence as memory of discrete content items is a poor indicator of a student's understanding of history. They maintain that "we cannot tell from tests of 'key facts' whether students leave school with a coherent framework of knowledge linking past, present and future which they can use to make sense of their place in the world" (p. 2). Furthermore, as Parkes & Donnelly (2014) argue, it is weak because the heated political debates generated in response to this perceived failure of learning are more reflective of a lack in public understanding of constructivist models of teaching than of young people's historical knowledge.

The claims that young people are ignorant about history have been challenged by history-specific cognitive research which shows that children actually know quite a lot about the past. Rather than relying on student recollection of discrete information as a display of historical understanding, these studies have instead concentrated on students' ideas, particularly their understanding of historical

evidence (Brophy & VanSledright, 1997; Lee & Ashby, 2000; Lee, Dickinson & Ashby, 2001; VanSledright, 2002; Barton, 1997a; Nokes, 2014). In doing so, they provide valuable insights into how children use and understand evidence. Such insights provide important roadmaps that chart the conceptual bottlenecks students are likely to encounter on the journey towards an understanding of the nature of history and historical evidence. The identification of re-occurring bottlenecks in the existing research contributed towards the development of the learning trajectories used in this study (these are covered in detail in Section 2.7.1). The following section focuses on research that illustrates children's capacity to engage with and understand historical evidence.

2.2.1 Children's understanding of historical evidence. Early research into children's use of historical evidence has highlighted their capacity think critically about the past. These studies found that even very young children demonstrated the ability to identify and draw inferences from mystery objects (Davis, 1986; Wright, 1984), engage critically with the process of enquiry (Cooper, 1992) and develop historical arguments about artefacts (Hodgkinson, 1986; Vella, 2010; Cooper, 1992). Collectively, these studies highlight young children's capacity to think historically about sources as evidence of the past. They also emphasise the importance of providing meaningful opportunities for young children to explore and discuss historical evidence thus enabling them to experience the complex nature of history. Providing opportunities to deliberate on conflicting evidence or interpretations of the past has proved to be another effective way of introducing children to the complex nature of historical study. Cooper, for example, found that familiar contexts, such as stories, fairy tales and nursery rhymes, allowed younger children to engage with sophisticated levels of historical interpretation. She argues that young children can "begin to understand why there may be more than one version of a story about the past" but to do this, they need to be provided with opportunities to "create their own interpretations, based on what they know, and to see how and why they may differ" (1995, p. 17).

Barton (1997b) found that, despite some difficulties, older primary children could identify, evaluate and resolve conflicting accounts of the Battle of Lexington Green. Similarly, VanSledright (2002) demonstrated that children were capable of critically analysing conflicting images of the same event. He reported that the majority of the students in his study could, with support, recognize perspective and bias and could engage in historical analysis. Indeed, many studies indicate that

children have the capability to use such reasoning, especially when given the appropriate supports and guides. Hoodless (2004), for example, found that children who had been introduced to aspects of historiography, and in particular, source analysis, understood that historical interpretations can change as a result of the agendas or contexts of the time in which they were created. In fact, without the support of the “tools of historiography” (Seixas, 2000, p. 34) to evaluate conflicting accounts, some appear to be challenged by the multiplicity of the past (Lee, 1998). Children, then, when given proper supports, can use evidence (Foster & Yeager, 1999), can critically consider the role this plays in constructing historical accounts (Lee, Ashby & Dickinson, 1996), can identify and analyse historical sources (Barton, 1997a; VanSledright & Kelly, 1998) and when equipped with “an intellectual toolkit” (Lee, 1998) can make sense of conflicting historical accounts.

These studies also highlight the countless factors that work to shape children’s conceptions of history and they demonstrate how school history both competes with and interacts with these influences. On a day-to-day basis students encounter history and the traces of the past children experience outside the school can be in tension with the more formal, analytical modes of history encountered within (Barton, 2008; VanSledright, 2002). These findings reflect one of the key points of the How People Learn project (Bransford, Brown & Cocking, 1999); children enter the classroom with preconceptions about the world and these preconceptions can act either as stepping stones or as stumbling blocks towards conceptual understanding⁶. From a pedagogical point of view, these initial preconceptions are important as they act as the “foundation upon which the more formal understanding of the subject matter is built” (Donovan, Bransford & Pellegrino, 1999, p.15).

Children, in trying to comprehend just how the world works, build their own ideas and develop their own explanations which they bring with them into the classroom. Constructivism, as a pedagogical approach to learning, takes these ideas and explanations into consideration. The following section discusses the foundational constructivist theories of Jean Piaget, Lev Vygotsky and Jerome Bruner⁷. This discussion is relevant to this study for three reasons. Collectively, these theorists

⁶ Common preconceptions children hold about history will be discussed later in the chapter.

⁷ I am conscious in selecting these as foundational theorists that the influence of John Dewey is also foundational in this regard. However, as the work of Dewey is examined as part of Chapter Three, I will not be reviewing him in this section.

provide the theoretical underpinnings of the Irish primary education system in terms of curriculum design and pedagogical practice; secondly, they are influential in terms of my own classroom practice, informing my pedagogical choices, the classroom culture I strive to create and my view of children's capacities; and thirdly, they have influenced, over time, questions relating to children's readiness to engage with complex historical ideas.

2.3. The cognitive revolution: from impossible to possible.

Influenced by the cognitive revolution of the 1960s, which gave rise to new constructivist pedagogical practices, curriculum developments based on an interpretative approach to history education gained increased popularity with the work of Piaget, Vygotsky and Bruner providing much of the theoretical underpinning for this change (Carretero & Bermudez, 2012). However, paradoxically, the cognitive theories of Jean Piaget in particular, almost put paid to the modern approach to history education before it had even begun.

2.3.1 Piaget's cognitive theory. Piaget's stage theory proposes that children construct their own realities through experimentation with their environment. It also proposes that this process is universal, innate and adheres to a biologically predetermined sequence. In Piagetian terms, children's thinking is understood to develop in a chronological and linear fashion, moving from concrete to abstract, simple to complex and from known to unknown (Grant, 2003). Accordingly, children cannot undertake certain tasks or types of cognitive reasoning until they are psychologically mature enough to do so (Piaget & Inhelder, 1969).

Piaget identified four main stages of thinking, three of which are applicable to primary school children. The pre-operational stage (age 2-7) is characterised by the development of language and also a growth in the ability to differentiate between past, present and future. The concrete operational stage (age 7-11) sees the development of children's ability to manipulate objects and representations of objects, and finally, the formal operational stage (from age 11-12 onwards) sees children begin to appreciate hypothetical situations and consider multiple perspectives (Grant, 2003). Piaget's theories of conceptual development, informed by logical formalism and founded on biological principles, had a far-reaching impact on curricular developments and led to the promotion of child-centred active learning that was premised on constructivist principles. However, as Retz notes, the view of history through a Piagetian lens was not particularly edifying (Retz, 2016).

In Piagetian terms, approaching history as the investigation, analysis and interpretation of sources was considered beyond the ability of primary school children (Hallam, 1970; Peel, 1967, as cited in Counsell, Burn, & Chapman, 2016). Such findings suggested that there was insufficient justification for teaching the disciplinary features of history before the age of sixteen; it was assumed that students were unable to develop an understanding of the concepts and procedures considered vital to the study of history until they reached the stage of formal operations. This interpretation of Piaget's work proved especially problematic for the teaching of history in the primary years as such an assumption curtailed early efforts to embed historical thinking in primary history curricula because the idea of children “doing history” seemed an impossibility.

While Piagetian theory revolutionised thinking about how children engaged with the world and the role of experience in the construction of knowledge, his delineation of fixed stages of development was contested as overly deterministic (e.g., Donaldson, 1978). From a historical perspective, Dickinson and Lee (1984) questioned the Piagetian premise that inferential thinking is age dependent by arguing that a child's thinking can “fluctuate widely according to the nature of the task, the variety of his experience, and the surrounding circumstances” (p. 117). While not completely discarding Piagetian stage theory, they proposed that the abstract nature of history and the incomplete nature of historical evidence called for a different approach to research in historical thinking rather than the Piagetian developmental model, which had its origins in the less abstract domains of mathematics and science.

Subsequent research examining children's thinking in history cast further doubts over some of the key premises of stage theory, particularly the proposition that thinking is age-dependent and that there are definable stages which all students must pass through before they are capable of understanding certain types of history or historical time (e.g., Thornton & Vukelich, 1988). These criticisms, however, should not detract from the value of the research undertaken using a Piagetian perspective. As Wineburg notes “Peel, Hallam, Jurd, and others were the first psychologists since J. Carleton Bell to reopen the question of the ‘historic sense’” (Wineburg, 1996, p. 428), and their efforts reinvigorated the field of history education research by encouraging fresh research efforts, which ultimately presented children's historical capabilities in a much more positive light.

2.3.2 Vygotskian social constructivism and the zone of proximal

development. The significant shift towards child-centred teaching methodologies focused on children's own ideas and understandings was shaped by the work of both Piaget and Vygotsky. While Piaget and Vygotsky both prized the principles of assembling constructs and internalizing knowledge, Vygotsky placed an additional emphasis on the significance of the cultural and social context of learning and the centrality of language to the development of thought. Where Piaget considered language as a tool shaped by cognitive development, Vygotsky held that language development runs parallel to cognitive development and that this relationship is a reciprocal one. Vygotsky argued that learning occurs as a result of interactions with others, especially more knowledgeable others, which could include peers, teachers and other adults (Karpov, 2013). He proposed the idea of a "zone of proximal development" which highlighted the centrality of the social interaction between the student and adults, or more competent peers. This zone represents the space between what the student can do independently and what can be done with assistance. Vygotsky believed that when a student is in the zone of proximal development, this assistance enables the student to move beyond current capabilities. Vygotsky's view, like that of subsequent researchers in history education, holds that the effective teacher is aware of a student's current ability and seeks to extend and build upon this (Haenen, Schrijnemakers, & Stufkens, 2003).

2.3.3 Brunerian scaffolding through enquiry. To the foundations of constructivist learning theory established by Piaget and further developed by Vygotsky, Bruner added a theory of cognitive growth. Bruner's theory of cognitive growth is underpinned by three guiding principles: learning should be grounded in experiences and contexts that inspire enthusiasm, activities should be designed using a discovery learning or enquiry-focused approach and lessons should be structured so that the features of the discipline can be easily understood by the student (Bruner, 1966). Bruner, heavily influenced by the work of Vygotsky, also challenged the idea that children learn in isolation, claiming that it is through culture that the child develops the framework for thinking.

One of the guiding principles shaping this study is Bruner's argument that complex ideas can be taught "in some intellectually honest form to any child at any stage of development" (Bruner, 1960, p. 33). This argument is founded on the powerful proposition that the intellectual activity of the child is no different in kind than the intellectual activity of a scientist. As Bruner explained:

Intellectual activity anywhere is the same, whether at the frontier of knowledge or in a third-grade classroom. What a scientist does at his desk or in his laboratory, what a literary critic does in reading a poem, are of the same order as what anybody else does when he is engaged in like activities—if he is to achieve understanding. The difference is in degree, not in kind. The schoolboy learning physics is a physicist, and it is easier for him to learn physics behaving like a physicist than doing something else (Bruner, 1960, p. 14).

This is because the fundamental ideas at the centre of any discipline are “as simple as they are powerful” (Bruner, 1960, pp. 12-13). Bruner held that teaching should reflect those simple, powerful and fundamental ideas that are specific to the subject as it is these ideas which provide the framework or learning structure to allow students to conceptually understand the discipline (Bruner, 1960). Many students find disciplines such as history difficult to master because there are few organising principles and many of its domain-specific concepts and procedures are context-bound (Havekes, Coppin, & Luttenberg, 2012). Disciplines such as history employ many discourses, many topics and many methods for dealing with events. Applying a Brunerian framework to the discipline of history presented an opportunity for students to engage with these discourses and methods in an authentic manner. This, in turn, provided an abundance of new possibilities for teaching and learning and so the idea of young children “doing history” seemed once more possible.

In summary, while Piagetian theory could be charged with making history impossible for children, by focusing experimentally on children’s construction of knowledge through experience as a central motif of children’s learning, Piaget revolutionised pedagogical theory and practice. Building on Piaget’s work, Vygotskian social constructivism, which defines learning as a social enterprise where language and thought are mutually shaped, has determined to a large extent, the interactive and social climate in which learning occurs and the role of the knowledgeable other in advancing children’s understanding. Children’s emergent capacities to engage with complex ideas and the authenticity of learning from within a discipline are defining features of Brunerian theory which have significantly influenced curriculum and practice and provided a justification for introducing historical thinking to children from an early age. Collectively, these theorists inform my approach to history education and underpin both the process of enquiry and the dominant pedagogical practices used in this thesis.

2.4 Towards a pedagogy for “doing history”

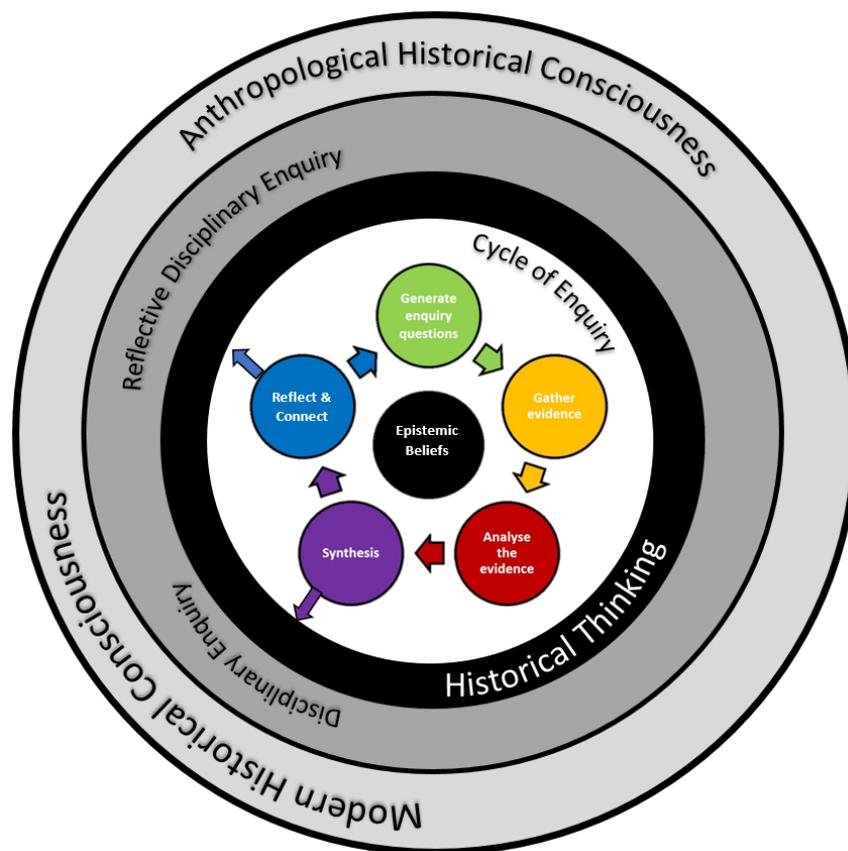
Changing conceptions of children’s thinking, strengthened by the emergence of constructivist theories of development, have signalled a repositioning regarding children’s capacities for learning history. No longer considered as passive receivers of knowledge, children are viewed as capable of postulating hypotheses, constructing theories, and meaning-making (Cooper, 2012). These changing views on children’s capabilities have coincided with an international re-conceptualisation of curricula and approaches to teaching history. This has resulted in a gradual move away from the primacy of content knowledge and towards an emphasis on the construction of historical knowledge. In this section, I draw on recent research on historical enquiry, historical thinking and historical consciousness to propose a pedagogy for doing history which acknowledges children’s capacity to engage critically, and epistemically, with the historic past.

In the last few decades, three particular concepts – historical enquiry, historical thinking and historical consciousness - have received much scholarly, yet disparate attention. Historical enquiry, when informed by the historical method, tends to focus on the disciplinary aspects of history teaching, but, when influenced by Dewey’s idea of reflective practice (1910; 1912), can assume a more civics-oriented approach (Barton & Levstik, 2004). Likewise, historical consciousness has a number of theoretical underpinnings. Historical consciousness, as it is often conceptualised in its modern form, can be traced to the philosophic German tradition of history didactics and can be considered as a “cultural achievement” that is a reflective response to a “radically temporalised and dynamic” post-industrial revolution world (Kolb & Straub, 2001). The anthropological perspective, however, positions historical consciousness as a general or universal human capacity that transcends modernity; a feature of all cultures, past and present, rather than a relatively recent phenomenon (Rüsen 2004). Historical thinking, as a pragmatic teaching construct, has been informed primarily by the work of U.K. educators (see Chapter One) and numerous scholars have built upon this (e.g: Wineburg, 2001; Seixas, 2004).

While it may be argued that these constructs, stemming from diverse epistemological and theoretical backgrounds such as philosophy, cognitive psychology and the historical method, are discrete in terms of function and purpose, they share several commonalities, and together, can provide a praxis, purpose and pedagogy for the teaching of history. Acknowledgement of the tensions that arise from these philosophical underpinnings is at the heart of this proposed pedagogy.

Historical thinking skills can be developed through engagement with the process of historical enquiry and such engagement can lead to the development of a conceptual and epistemic understanding of the nature of history and historical knowledge. Historical thinking and disciplinary enquiry focus on the construction of historical knowledge while civics-framed enquiry and historical consciousness are concerned with the broader issues that inform society. It is at the junction of these purposes that such a pedagogy can be discerned (See Figure 2.1).

Figure 2. 1: Towards a pedagogy for “doing history”



The following section explores these three constructs in more detail and describes how they can be woven together to shape a pedagogy for teaching and learning history in the primary classroom that moves history beyond the textbook and classroom and into a space that has the potential to address issues that are relevant to children’s lives.

2.4.1 Historical enquiry. At the heart of how to teach history is the question of why history is taught. In Chapter One, two broad positions were identified. These positions underline the philosophical and epistemological differences at the centre of

historical enquiry. Some educators take a disciplinary perspective and focus on the development of domain-specific skills that draw from the historical method (e.g., Lee, 2004; Wineburg, 2001; Nokes, 2014). Others perceive history as the means to encourage the development of democratic citizenship and trace this to the work of John Dewey as a foundation for engaging students in meaningful and reflective enquiry (e.g., Barton, & Levstik, 2004). In the following section, both of these approaches to historical enquiry are examined.

2.4.1.1. Disciplinary enquiry. Through the disciplined aspect of historical enquiry, students learn the power of the historical question, how to source and evaluate historical evidence and how to engage with conflicting accounts to create their own interpretation of past events (Levstik & Thornton, 2018). It draws on disciplinary content through the use of the first-order and second-order concepts that are associated with historical study. First-order concepts include the terms and the vocabulary that students use to engage with historical enquiries. This knowledge includes dates, events, and terms such as “revolution”, “democracy”, “slave”, all of which have historical meanings that can change over time. Second-order concepts can be considered as a historian’s *conceptual toolkit* which includes, among others, concepts such as significance, change & continuity, or causation. Through enquiry, students engage with these concepts in the process of synthesising their own research into logical arrangements that replicate authentic historical narratives (Foster & Padgett, 1999).

Foster and Padgett (1999) maintain that while the purpose of historical enquiry is not to turn students into “mini historians” (p. 358), it nevertheless equips them with the skills to examine and interrogate the human story (including their own place within that story) over time. Through the consideration of competing perspectives and the evaluation of competing claims, they argue that students can reach informed decisions supported by evidence. As some researchers claim, such practices can be of benefit when considering contemporary events, participating in debates or when even considering political or ethical dilemmas such as deciding on how to use one’s vote (Laville, 2004, p. 166). A recent, large-scale study conducted by Reisman (2012) found that disciplinary-based enquiries had a positive effect on students’ historical thinking skills but, perhaps more significantly, she also found that the students demonstrated the ability to transfer their new strategies to newer, contemporary issues thus fostering historical habits of mind that can be used to orient life in the present. Scholars focused on the disciplinary aspects of history education

have often neglected the larger societal implications but as Reisman (2012) and Laville (2004) have indicated, connecting disciplinary methods to such larger societal questions brings a deeper purpose to the studying of history, a purpose that links disciplinary enquiry to more reflective forms of enquiry.

2.4.1.2. Reflective enquiry. Educational philosopher, John Dewey (1910) viewed enquiry as essential in the formation of the thinking skills and habits of mind needed to create a rational interpretation of the past and Barton and Levstik (2004) build their definition of enquiry around Dewey's position on reflective thought. Barton and Levstik advocate strongly for a civics-oriented approach to history education and argue that history should be situated at an intersection that supports the development of both the skills and the attitudes required of citizens living in pluralist, participatory, and deliberative democracies (2004). For them, purposeful enquiry involves asking questions, sourcing information to answer those questions, creating interpretations and reflecting on possible solutions (Barton & Levstik, 2004). As Levstik and Thornton (2018) note, it is the asking of meaningful questions that can connect enquiry "implicitly or explicitly, to informed civic action" (p. 481).

The connection between historical enquiry and the development of the democratic citizen is also grounded in the idea that historical enquiry is reflective (Levstik & Thornton, 2018). Reflective enquiry creates the opportunity to ask bigger questions, revisit sources, review previous interpretations, and consider the implications of the investigation through a humanistic and civic lens (Barton & Levstik, 2004; Levstik & Thornton, 2018). It is through this reflective process that historical enquiry can transition from a process of knowledge construction to the development of civic competence. By objectively examining the perspectives and values that influenced people of the period under study and by reflecting on the lessons that present society can draw from the choices these historical actors made, reflective enquiry allows students to recognise the importance of evidence in arguments, to practice arriving at evidence-based conclusions, to challenge accepted or even "official" truths, to question conflicting information (Barton & Levstik, 2004) and to connect their findings to bigger societal issues such as interrogating the historic roots of contemporary issues. Unfortunately, as Levstik and Thornton (2018) have noted, all too often, historical enquiries end before the real civic engagement that connects the enquiry to students' lives begins.

2.4.2 Historical thinking. Defining historical thinking is not an easy task, primarily because there is no one preferred term nor indeed is there full consensus on what exactly constitutes it. Scholarship in this area of history education uses several terms interchangeably to describe a range of similar concepts and skills. Lévesque, for example, proposes the idea of *thinking historically* (2008) while several others use the term “historical thinking” (Wineburg, 2001; Seixas, 2004; VanSledright, 2002). Some use *historical literacy* or *historical understanding* (Lee 2004) and yet others describe it as *historical reasoning* (van Drie & van Boxtel, 2008). A general lack of consensus on how historical thinking skills should be taught, and on determining the most appropriate framework for assessing this teaching, further complicates the issue.

Lévesque (2008) places emphasis on the difference between *first-order* substantive knowledge and *second-order* procedural knowledge, creating the distinction between what history is about and how it is studied. He defines historical thinking as “the intellectual process through which an individual masters, and ultimately appropriates, the concepts and knowledge of history and critically applies such concepts and knowledge in the resolution of contemporary and historical issues” (p. 27). van Drie and van Boxtel (2008) prefer to employ the term historical reasoning rather than historical thinking to refer to the deep learning and understanding that emerges from describing, comparing or explaining historical phenomena. Although there may be no clear consensus on the definition of historical thinking, general agreement can be seen in the definitions given that historical thinking, at the very least, involves engaging in historical enquiries using both first and second-order concepts to develop reasoned findings about the past that are grounded in the consideration and synthesis of historical sources.

Drawing on the dichotomy between the novice and the expert, Wineburg’s (1991) influential study of the historical thinking skills employed when deliberating on historical sources, looked at the strategies used by historians to analyse primary and secondary documents. Wineburg then compared the cognitive processes undertaken by historians to those of high school students when reading the same primary sources. His studies suggest that high school students do not spontaneously use these skills when reading documents and he identified three fundamental heuristics employed by historians which he considers central to the development of historical thinking and understanding. The first of these heuristics is sourcing, which Wineburg defines as “the practice of reading the source of the document before

reading the actual text” (Wineburg, 1991, p. 510). The second is contextualization which entails locating events in the time and space in which they occurred and the third is corroboration or the act of comparing documents with one another.

Wineburg describes these domain-specific practices as “unnatural” because historical thinking, he argues, “is neither a natural process nor something that springs automatically from psychological development” (2001, p. 7). However, to describe this form of critical thinking as “unnatural” may be overstating the case. It could be argued that rather than “unnatural” these heuristics are learned by historians through engagement with evidence and become natural ways of thinking with practice. In addition, this study seems to stem from a deficit view of students’ actual capacity for historical thinking as on many occasions the “novice” participant showed clear examples of historical thinking that were either overlooked or dismissed because they did not correlate with the thinking of professional historians.

While the application of specific curricular interventions based on Wineburg’s sourcing heuristic has resulted in convincing gains for classroom practice (Monte-Sano, & Reisman, 2015), these approaches to historical thinking, particularly in the United States, have not gone uncontested. In recent years they have been criticized for an excessive emphasis on a disciplinary form of historical knowledge that is more characteristic of academic history than the wider educational context in which school history learning occurs (Barton & Levstik, 2004; Lévesque & Clark, 2018). Monte-Sano and Reisman (2015), for example, recently highlighted the danger of equating historical thinking skills to specific and particular forms of historical literacy. This is particularly the case where efforts are made to align them to curricular objectives. As Reich (2015) points out, these objectives, though usually influenced by research, are often developed by administrators in a “different institutional context, with different imperatives, mandates, and political considerations” (p. 221). Objectives often aim to identify desired outcomes or targets of curricular instruction; however, they are not road maps for instruction and must be unpacked in order to delineate what to teach and how to teach it. The challenges students encounter when facing the difficult concepts, ideas and skills that contribute to the practice of thinking historically are very often implicitly embedded into these curricular objectives and must also be unpacked. The key to learning for conceptual understanding, then, is to make explicit these implicit concepts, ideas and skills. Many of these challenges are essentially epistemic in nature and in the case of history, students often engage in an uncritical evaluation of historical evidence

because they view history as a set of received truths to be memorised (Wineburg, 2001).

Irrespective of whether historical thinking is viewed as “unnatural” or “learned”, thinking historically, as Wineburg argues, demands a particular and “distinctive epistemological stance” (1991, p. 495) that requires much more than generic comprehension skills. This stance requires a knowledge of the disciplinary ways to interpret and reason with historical evidence as well as an appreciation of the “slippery nature” of historical knowledge (Monte-Sano & Reisman, 2015). While the sourcing heuristics identified by Wineburg have informed much of the subsequent research on understanding historical thinking, particularly in reading and writing in educational settings, this “slippery nature” has, until recent years, been largely ignored (Maggioni & VanSledright, 2016). Situating historical thinking within historical enquiry, rather than as a distinct feature of historical learning, highlights this aspect of the nature of history and connecting these to the concept of historical consciousness gives a broader purpose to the teaching and learning of history (See Figure 2.1).

2.4.3. Historical consciousness. As outlined earlier, there are a number of theoretical positions used to define historical consciousness. It can be considered as a cultural feature of Western modernity or as a universal capacity inherent in all cultures. Gadamer, for example, defines historical consciousness as “the privilege of modern man to have a full awareness of the historicity of everything present and the relativity of all opinions” (Gadamer, 1987, as cited in Friedrich, 2010) and argues that the individual cannot look at the past without doing so through the lenses of their own particular worldviews (*weltanschauung*), personal experiences or the historical moment. Essential to this conceptualisation of historical consciousness, is the reflexivity of the modern spirit, the ability to look at the multiplicity of viewpoints which enables the individual’s capacity to see the perspective of the other (Gadamer, 1975). Rösen (1996) however, cautions that western conceptualisations of history as an academic discipline may be insufficient to account for what he considers as an anthropologically universal historical consciousness. He argues that the intellectual thought processes that represent historical consciousness share cross-cultural commonalities, considering that all human cultures appropriate the past to “understand their present-day life and develop a future perspective on themselves and their world” (p. 8).

In recent decades, Rösen's concept of historical consciousness has received considerable scholarly attention. Much of this work has focused on the pedagogisation of historical consciousness and a leaning towards an understanding of it, not as a state of mind, but as a set of capabilities to be achieved. Friedrich (2014) argues that the theoretical meta-concept of historical consciousness, when adapted for pedagogical use, has assumed a "radically different" form. He maintains that this has altered the concept from one of universal possibility, in which all practice has a fundamentally historical quality that allows for critical self-reflection, and has reduced it to a set of historical thinking skills that emphasise historical consciousness as an intentional teaching intervention. This, it can be argued, atomises and compartmentalises an inherently holistic construct. In making it a skill to be taught, educators transform it from a fundamental characteristic of the individual to something to be formed only in the educated mind.

This study conceptualises historical consciousness as an anthropological universal and views it as a historical lens through which the world is perceived and acted upon. Historical consciousness can be considered, then, as the framing of an individual's perception, understanding and use of the past and their place within it, which, bounded by time, culture and context, informs present and future action. Viewing historical consciousness in this manner brings a broader purpose to the aims of school history. It also highlights the connection between it and the epistemic beliefs about history an individual holds. If historical consciousness is considered as the lens through which history is interpreted, and if historical understanding stems from this interpretation, then the beliefs an individual holds about historical knowledge can play a fundamental role in facilitating such understanding (See Figure 2.1).

2.4.4. Towards a proposed pedagogy: reflective disciplinary enquiry.

While approaches to enquiry, historical thinking and historical consciousness appear to spring from divergent or opposing positions, they actually share much in common. In particular, they share an acknowledgement of the interpretative nature of history and a recognition of the importance of student engagement in the practice of doing history. Rösen argues that historical learning is only truly feasible when students are confronted with an authentic need for orientation and through the interpretation of problems that are of significance to the present day. This, he maintains, should be operationalised not by "presenting a given, pre-fabricated (master) narrative" but by "putting students into the situation to research and interpret history themselves"

(Körber, 2015, p. 30). Beginning with the need for the individual to orient themselves in time, Rösen identifies the relationship between the discipline of history and the wider cultural conditions in which it is enacted. Accordingly, historical enquiries into the past begin with, and are inspired by, questions that stem from current issues and cultural needs for life in the present. These questions can be answered through the use of disciplinary methods to create representations which are then useful for life orientation (Seixas, 2017). This process highlights the dialogical relationship between the disciplinary practices of history and what Rösen terms as life practice.

Rösen (2012) also maintains that future-orientation, in particular, plays an important role “since the students have to learn how to master their future lives as adult citizens according to the demands of the historical culture of their country” (p. 523). However, Rösen’s conceptualisation of children as “future” citizens is problematic as it presents a deficit view of children which diminishes the capacities they currently possess and ignores the ways in which they already contribute to society (Nishiyama, 2017; Osler & Starkey, 2006). Education, whether occurring within the history classroom or not, should be conceptualised as education for the present rather than as an apprenticeship for adult roles in the future. In contrast, reflective enquiry as envisaged by Barton and Levstik (2004) acknowledges the contribution which history can make in the present. It is through engagement with the past and the historical actors that have shaped it, that students can come to realise their own agentic capacity to influence issues and events (Barton, 2012; Barton & Levstik, 2004; Barton, 2012), and, more importantly, to realise their own civic responsibility in the decision-making process.

Teaching history through reflective enquiry while also in consideration of its epistemic and disciplinary roots, then, has the capacity to develop in students the ability to think historically about the world in which they live. Reflective disciplinary enquiry can actively engage students in posing questions, problem-solving and investigating issues from a variety of perspectives. It can also shape them to be active and informed citizens who are willing to question and challenge issues of justice, equality and inclusion. Reflective disciplinary enquiry recognises the potential of disciplinary ways of thinking to engage with the bigger questions about society and the uses of history, especially when prompted by the civic framing of reflective enquiry. Engagement with such practices also develops students’ appreciation of social and political issues and supplies the strategies, perspectives and skills to

enable them to voice their views and propose solutions which acknowledge multiple points of view. In the current political and social climate, the ability to participate in such practices has never been more important.

2.4.5 A crisis of epistemology? The world is in the grips of a democratic downturn that is witnessing the rise of populist and authoritarian politics and in this era of “post-truths”, “alternative facts”, and “fake news”, the argument for the teaching of history as a form of critical enquiry has never been more pressing. With world leaders regularly employing populist rhetoric to mobilise the public and a vernacular culture rooted in social media, knowledge claims are increasingly accepted without question. Effective history teaching can empower students as informed citizens who can challenge the influence of the demagogic demands these place on society. The ability to evaluate evidence, assess competing arguments, create evidence-based claims and deliberate on emotionally charged topics, all key elements of historical enquiry, can provide an antidote to the rise of the authority of “alternative facts” and “fake news”. Indeed, Barton (2017) argues that “developing students’ ability to use empirical evidence to make such claims is thus one of the most important goals of history and social science education, and indeed, of schooling more generally” (p. 458). Such a pedagogy of critical thinking, founded on the premise of history as a discipline of reflective enquiry, can encourage students to ask bigger, probing questions, to connect current issues to their historic origins, to engage with controversial and emotive histories and to interrogate humanity’s relationship with the world over time.

The current climate is often described as “democracy in crisis.” However, at the heart of this is, in fact, a crisis of epistemology that has the potential to threaten the integrity of democratic processes and intensify social divisions. In what can be described as an intellectual environment of epistemic and judgmental relativity, Harrison and Lockett (2019) claim that the status of knowledge claims, irrespective of their provenance, has come to be viewed with scepticism. This crisis of epistemology can be offset by a pedagogy that encourages children to interrogate scepticism and unverified claims that are taken as truths by urging them to ask: What is your claim? What evidence do you have to support it? And how reliable is that evidence? These questions are, to a large extent, epistemic in nature. The next section analyses the literature pertaining to epistemic beliefs, providing an overview of its trajectory over time and focusing, in particular, on children’s epistemic beliefs about history, including those that serve as bottlenecks to inhibit understanding.

2.5 Epistemic beliefs

Epistemology, a branch of philosophy concerned with the nature and justification of human knowledge (Hofer & Pintrich, 1997), has been the subject of growing educational research for several decades. Of particular importance to this study is the line of research which considers the relationship between learning and the beliefs that students have about the nature of knowledge and the process by which it is acquired. Interest in the study of this area stems from a variety of domains, which include: educational psychology, developmental psychology, disciplinary education and the learning sciences. As a result of these disparate and distinct approaches, researchers use what Gottlieb and Wineburg (2012) describe as “a bewildering variety of phrases” to define people's evolving conceptions of knowledge (p. 129). These include, among others: ways of knowing (Brookes, Belenky, Clinchy, Goldberger, & Tarule, 1988), epistemological understanding (Kuhn et al., 2000), epistemological theories (Hofer & Pintrich, 1997), epistemic metacognition (Kitchener, 1983), reflective judgment (King & Kitchener, 2004), personal epistemology (Hofer & Pintrich, 2002) and epistemological beliefs (Schommer & Walker, 1995). According to Greene, Azevedo and Torney-Purta, (2008), the divergence in terminology relating to epistemology is symptomatic of an equivalent inconsistency in the theoretical underpinnings of these constructs and calls have been made for greater conceptual clarity in future research in the field (Hofer, 2016; Sinatra, 2016).

The term epistemology itself is derived from the Greek words *episteme* meaning knowledge, and *logos* meaning “theory of, account of, or discourse about” thus, according to Kitchener (2002, p. 92), epistemology translates as a theory of knowledge. Kitchener criticizes the use of the term *epistemological beliefs* as etymologically, the direct translation of epistemological beliefs is “beliefs about the theory of knowledge” (p. 92). Instead, he argues for the term *epistemic beliefs* which means beliefs about knowledge. He cautions that failure to distinguish the epistemic from the epistemological can result in confusion relating to the subject matter under study. In light of this distinction, the term epistemic beliefs will be used in this study to refer to student beliefs about knowledge and knowing, particularly regarding the subject of history. Sinatra (2016) suggests that *epistemic cognition* is the process upon which content such as epistemic beliefs and knowledge, among other things, act. Epistemic cognition, therefore, pertains to the processes involved in defining,

acquiring, and using knowledge (Greene et al., 2008), and includes metacognitive thinking about the nature of knowledge and the justification for knowing.

A chronological overview of the research conducted in all areas considered relevant to epistemic cognition would be a lengthy task and one which would make identifying areas of convergence or divergence impossible to distinguish. Instead, historical developments within these disparate fields will be briefly reviewed to describe the key findings and conceptual models that have influenced research on the study of epistemic cognition. Given the variety of frameworks and the terminology used in these, the researcher's own nomenclature will be used when necessary.

Hofer describes research on epistemic cognition in terms of three waves. The first wave, using primarily qualitative, interview-based research led to the creation of developmental models (Kuhn, 1991; Perry, 1970). The second wave challenged the assumptions of the developmental models with a reconceptualization of constructs as a set of multi-dimensional beliefs assessed by Likert scale items (Schommer-Aikins, 2004) and the third wave involved the theoretical development of new models, a greater emphasis on philosophical underpinnings, research on domain specificity and the inclusion of a broader range of the general population (Hofer, 2016).

2.5.1 The first wave: intellectual and ethical development. The contributions of the first wave of study can be considered as foundational in that researchers detected a concept that psychologists had not yet tackled; one that seemed to play a considerable part in education and appeared to be related to critical thinking (Hofer, 2016). One of the first comprehensive forays into the field of epistemic cognition was Perry's longitudinal study (1970) of a sample of male Harvard and Radcliffe students interviewed over a four-year academic career. Perry's initial objective, to capture the "variety of ways in which students responded to the relativism which permeates the intellectual and social atmosphere of a pluralistic university" (pp. 3-4), was accomplished through qualitative analysis of in-depth interviews.

Perry found that not only did students have identifiable beliefs about the nature of knowledge, but that these beliefs evolved throughout their academic education. He devised a developmental scheme to map this evolution, similar to the Piagetian stage model popular at that time, with nine consecutive stages. These have subsequently been grouped into four main positions and an explanation of these stages is warranted here as future research in the field was based on Perry's work (see Table 2.1).

Table 2. 1: Perry's Stages of Intellectual Development

Position	Knowledge	Learning
Dualism	<ul style="list-style-type: none"> ● Knowledge is received, not questioned ● Dualistic ● Known by authorities 	<ul style="list-style-type: none"> ● Passive ● Experts transmit information ● There is a correct answer to be learned
Multipism	<ul style="list-style-type: none"> ● Acknowledging uncertainty ● Acknowledging diversity of opinions of others 	<ul style="list-style-type: none"> ● Shadows of analytical thinking ● Students recognize that their opinions matter
Relativism	<ul style="list-style-type: none"> ● Contextual ● Relative ● Can be discovered 	<ul style="list-style-type: none"> ● Students evaluate viewpoints based on source and evidence ● Experts are subject to scrutiny
Commitment	<ul style="list-style-type: none"> ● Basis for commitment to certain values, behaviours ● Integration of knowledge from other sources with personal experience and reflection 	<ul style="list-style-type: none"> ● Active participant ● Constructs and deconstructs connections ● Commitment to values and taking responsibility for these ● Acquisition of knowledge is ongoing

Dualists (stage 1 and 2) hold a belief that knowledge is factual and static, is received from authorities or experts and is either right or wrong. Dualists do not employ critical thinking about knowledge or the source of knowledge; however, Perry contends that experiencing cognitive disequilibrium allows dualists to move to the next position (Braten et al., 2016). Multipism (stage 3 and 4) is defined as a position where individuals begin to acknowledge uncertainty and the diversity of the opinions of others (Perry, 1970). On encountering experiences promoting cognitive disequilibrium, Multipists move towards a more relativist position, thus acknowledging the provisional and contextual nature of knowledge and the need for logic and critical thinking to help organize knowledge propositions from other types of claims (Braten et al., 2016). Contextual Relativism (stage 5 and beyond), is concerned with how individuals begin to assume certain values and identities that shape their reasoning. This allows for a qualitative leap wherein individuals see themselves as active meaning-makers. Finally, Commitment within Relativism (stage 6-9) refers to the stage where individuals commit to specific stances in the face of defensible alternatives as a means of supporting features of self-identity. This position is concerned with how individuals adopt the specific values and identities that form reasoning (Braten et al., 2016). Although later criticized for its reliance on an all-male sample, and a strong assumption of a linear, stage-like progression, his findings offered new insights into how students think about knowledge. Modifications of his dualistic–relativistic continuum have been used since by researchers and educators wishing to understand how students approach learning (Khine, 2008).

Influenced by Perry's (1970) developmental scheme, Kuhn, Cheney and Weinstock (2000) put forward a three-stage model of epistemic understanding. Absolutists consider knowledge to be objective in that it can be observed or reproduced and is composed of facts that come from consensus built over time. Absolutists also place faith in expert authority as the basis for knowing. Multiplists, however, reject the certainty of Absolutism and instead become increasingly aware of the uncertain and subjective nature of knowing. Multiplists consider claims to be subjective opinions which are freely selected by those that hold them. To the Multiplist, everybody is entitled to their opinion and all opinions are equally valid. The Evaluativist reintroduces the objective aspect of knowing by recognizing uncertainty without abandoning evaluation. To the Evaluativist, two individualists may hold contrasting opinions and both of these can be right; however, for a variety of reasons, one opinion may be "more right" than the other especially when bolstered by argument and evidence (Kuhn et al., 2000). According to this model, individuals progress through a series of beliefs about knowledge that evolve from a naive outlook to a more sophisticated position.

Developmental models are multi-dimensional but progress is assumed to develop across each dimension in a somewhat integrated fashion; however, Kuhn, Cheney and Weinstock's model (2000) also recognises the domain specificity of epistemic understandings. In recent years, many researchers concur that there are both domain-general and domain-related epistemic beliefs which operate concurrently (e.g., Muis, Bendixen, & Haerle, 2006) and a range of instruments have been developed to address the issue of generality versus specificity (Hofer & Pintrich, 2002; Schommer-Aikins, 2008). The current consensus indicates that while general beliefs are relatively stable, domain-specific ones may be more malleable and subject to change through short-term interventions (Muis et al., 2006).

2.5.2 The second wave: paradigmatic shifts and dimensionality.

Schommer's research (1990) challenged the assumptions of the developmental approach and her multi-dimensional model of "epistemological beliefs" with independent dimensions initiated the launch of the second wave of research (Hofer, 2016). Schommer's 63 item measure made it possible not only to measure large numbers of people but also allowed for the linkage of epistemology to a variety of other constructs. In Schommer's model, five dimensions are captured using Likert instruments. These dimensions include: fixed ability, quick learning, simple knowledge, certain knowledge and sources of knowledge (Schommer, 1990).

Schommer (1990) investigated the link between epistemology and a variety of other constructs such as comprehension, performance and use of strategies. Others, building on her work, explored the connection between epistemic beliefs and cognition (Kardash & Scholes, 1996) and conceptual change (Windschitl & Andre, 1998). In the years that followed, a range of models and measurement instruments were developed based on Schommer's work (Hofer, 2000; Schraw, Bendixen, & Dunkle, 2002). Science educators, in particular, began to look at how student beliefs about the nature of science affected student ability to understand the subject and educational psychologists began to challenge the idea of domain generality by arguing that students could, in fact, hold differing epistemic beliefs about specific subjects (Hofer, 2016).

2.5.3 The third wave: theoretical, cultural and methodological expansion.

Extending on the work of Schommer (1990), and following a broad review of the literature, Hofer and Pintrich (1997) put forward a multi-dimensional theoretical framework for epistemic beliefs. Hofer and Pintrich categorised two general areas of epistemic cognition: 1) belief about the nature of knowledge, which incorporated beliefs about the simplicity and certainty of knowledge; and 2) the nature of knowing, which incorporated beliefs on the source and justification for knowing. Expanding the work of Kitchener (1983), they proposed that beliefs about knowledge could be combined with metacognitive knowledge (e.g., knowledge of learning strategies) and beliefs about knowing could be combined with metacognitive judgments when reading sources which allow researchers to predict the epistemic moves which make up epistemic cognition.

This wave has also seen the marrying of philosophical accounts of epistemology with studies on epistemic cognition as researchers have delved even deeper into the field (Hofer, 2016), thus broadening the scope and depth of epistemic studies. It has also seen a global interest in the topic which opens the door of possibility to inter and cross-cultural studies. This wave also saw an end to the debate concerning domain generality and domain specificity and a recognition that epistemic cognition operates on several planes: general, disciplinary and specific. As the field has broadened in scope, so too has the range of methodologies, and the third wave has seen a variety of new research instruments including a semantic instrument, the use of card sorts and the application of mixed-method studies (Hofer, 2016). Perhaps the most interesting of the developments, particularly in relation to this study, is the inclusion of a broader study population and educational environments.

Originally, studies generally involved adults and older adolescents but in the last number of years, studies have taken place with primary and pre-school aged participants (e.g., Schommer, Crouse & Rhodes, 1992).

2.5.4 Children's epistemic beliefs about history. Despite a burgeoning interest in epistemology, there have been very few studies that focus specifically on children (Khine, 2008; Sinatra & Chinn, 2012). In fact, Moschner, Anschuetz, Wernke and Wagener (2008) point out that some experts query if children can converse on abstract concepts such as beliefs about knowledge and knowing while others have reservations about children possessing epistemic beliefs at all. However, in the last few years, there has been a wave of research in this area which indicates that children do have epistemic beliefs of both a domain-general and domain-specific kind. One such example is the work of Schommer, Crouse and Rhodes (1992) who found that children who considered knowledge as simply a collection of separate facts used naive strategies when handling text and showed lower comprehension rates than children who saw knowledge as more sophisticated. Studies such as this indicate that those who believe knowledge is a series of isolated facts tend to learn content off by heart or use the strategy of surface learning whereas those who believe knowledge to be complex and subject to interrogation use deep processing strategies (Schommer et al., 1992; Kuhn, 2011). Of the research that has been conducted so far, a high correlation between epistemological beliefs and a range of skills and attitudes such as academic performance (Hofer, 2016; Schommer & Walker, 1995), comprehension of text (Schommer, 1990) and critical reasoning (Bendixen, Dunkle, & Schraw, 1994) has been shown.

Some studies suggest that children as young as seven can hold complex understandings of the nature of knowledge and can understand that people can have multiple interpretations of the same information (Chandler, Hallett & Sokol, 2002). Kuhn et al. (2000) found that children as young as ten years old can hold sophisticated levels of epistemic understanding and Mansfield and Clinchy (2002) found children could verbalise the underpinning epistemic rules they used to justify their choices in given scenarios. Haerle (2006) used semi-structured interviews with German fourth-grade children to identify their epistemic beliefs and found they held a range of sophisticated theories on the origin, acquisition and verification of knowledge. These findings contradict the claims of earlier research which assumed that changes in epistemic beliefs can only be observed in older students (Perry, 1970; Baxter Magolda, 1992).

Much of the research on epistemic cognition to date has focused on domain-general (i.e. general beliefs about knowledge) studies and as a result, has missed many of the domain-specific elements (i.e. beliefs about a specific subject) suggested by the literature. There is, however, a small but growing body of domain-specific research in history which indicates that an individual's epistemic cognition has a powerful impact on learning and understanding within specific subject matters (VanSledright, 2014; Lee & Shemilt, 2003). Within the discipline of history, epistemic thought patterns are applied to make sense of historical concepts and research indicates that these patterns affect the capacity to engage with historical sources and influence how the individual tackles the investigation of the past. Early indicators signal that "naive" epistemic beliefs relating to the nature of history, and how historical knowledge is created and justified, actually inhibit the historical thinking that is required to develop deep historical understanding (VanSledright & Maggioni, 2016; Lee, 2004).

2.5.5 Epistemic beliefs as bottlenecks in historical understanding.

Research in history education has provided robust arguments for teaching students to interpret historical evidence (Barton & Levstik, 2004; Levstik & Barton, 2001; VanSledright, 2002; Wineburg, 2001), yet this approach to the teaching of history can pose epistemic challenges to students precisely because it is "counter-intuitive" (Lee, 2004, p. 134) to everyday assumptions about the past and how historians reconstruct it (Epstein, 2012). As Chapman (2011) outlines, many of these everyday ideas are incompatible with the study of history and when used in a historical sense, may fail completely. For example, many students equate history with the past rather than as a study or interpretation of the past. This is an epistemic bottleneck that is centred around the everyday meaning of the word "past". When students view history as simply "the past" they do so with everyday assumptions about that past such as "the past cannot change" and though this is accurate, and events happen in a particular way, history is the study and interpretation of those events and those interpretations can and do change based on the finding of new evidence or new analysis. The fact that historical content is generally located in the past also creates a semantic connection between the words "the past" and "history".

Viewing history as the past also affects how students view accounts of the past such as those encountered in the textbook. Many students view these as the definitive version of events which can lead them to view the past, and interpretations of it, as fixed, immutable and unchanging (Chapman, 2011). Some then adopt a

relativist view of history and believe that we in the present can never really know anything about the past because we were not there to directly experience it. Again this centres on a common-sense view of recounting everyday events.

Attending to and challenging these “everyday epistemologies” is, as Chapman (2011) argues, imperative in helping students develop powerful ideas about history. Without explicit teaching on the work of historians, or engagement with historical thinking and historical enquiry, many students will continue to view history as the past and view it as factual, fixed and uncontested (Lee & Ashby, 2000; Lee, 2005). This leads to an epistemic stance that creates one of the greatest challenges students face when studying history. By viewing history as simply the past, students view historical understanding as merely recounting events that have happened (Nokes, 2014).

When evaluating the beliefs of children with regard to the subject of history, VanSledright (1997) concluded that some students understand history as “a fixed tale, a body of inert facts, holding within it a series of important moral lessons that might be learned, stored in memory, and acted upon at the right time” (p. 550). Likewise, Bain (2000), found that his many of his students articulated a “static, formulaic vision of history” in which the goal was to learn off facts about the past (p. 337). VanSledright’s subsequent research revealed much more promising results and he observed that with heuristic instruction, focused on techniques relating to historical thinking, nine and ten –year old students could “identify the nature of sources (primary and secondary), and cross-reference them, check and corroborate evidence before drawing conclusions, and read and analyse historical evidence critically” (2002, p. 149).

Developing the aptitude for historical thinking, therefore, presents a challenge for the majority of students. It involves not just the close examination of historical evidence and artefacts but the acknowledgement of the past on its own terms. Humans possess a natural assumption that others believe and behave as we do but studying history interrupts those assumptions because as Hartley famously reminds us “the past is a foreign country” (Hartley, 1953, p. 9). A foreign country where we need to constantly check if we are “imposing our own frameworks of meaning upon people from another time” (Seixas & Peck, 2004, p. 110). Those who investigate the past do so from what VanSledright terms as a “contemporaneous time zone replete with its own, often contrasting norms, values, and emotional valences” (2010, p. 47). Knowledge of what occurred in earlier times, therefore, must be constructed from the

investigation, selection and interpretation of sources while also being mindful of the excesses of presentism.

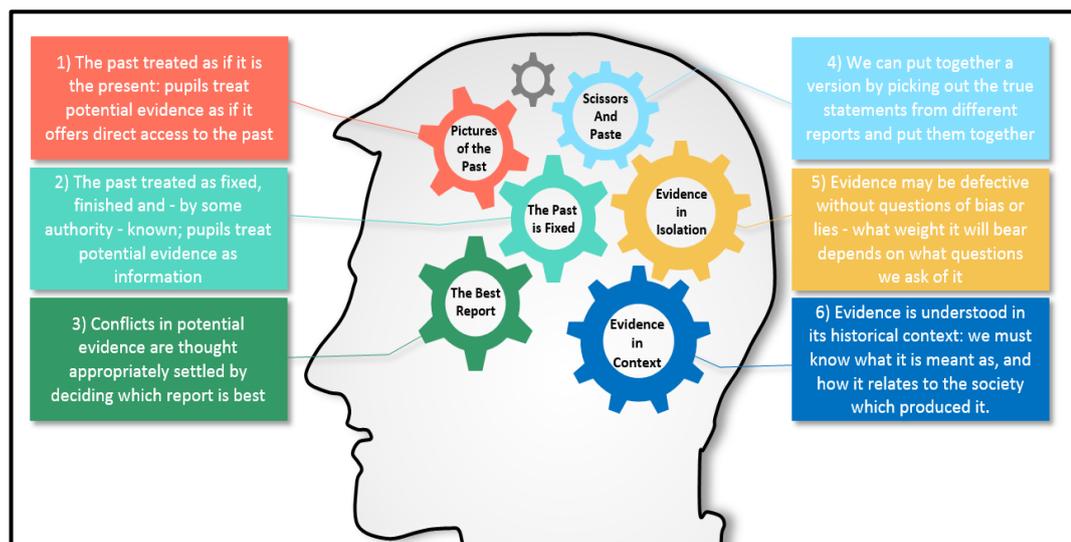
Like Chapman (2011) and Lee (2005), VanSledright and Maggioni (2016) argue that the ideas that people have about the nature and justification of historical knowledge play a large part in their learning experience and their approach to the discipline of history. Furthermore, they argue that while some epistemic beliefs support the creation of historical knowledge and deep understandings of the past, others are inclined to restrict the learning process by nurturing a sense of resignation at the challenge of learning history. Understanding those epistemic beliefs that are particular to the discipline of history may provide the key to constructing a better model for progression and understanding in history education. In the following section, a number of existing models of epistemic progression in history are outlined.

2.6 Progression in historical understanding

Drawing on the work of Lee and Shemilt (2003), this study differentiates between the terms *progress* and *progression*. There are, as Lee and Shemilt argue, a variety of means by which students can progress in history, for example, by keeping better notes, writing more detailed essays or learning more information. Progression in history, however, is not simply a case of learning more facts, but rather, is related to the ideas children have about history and the past and how these can change over time. The concept of progression, according to Lee and Shemilt, is more specific than progress as it relates to the acquisition of more powerful ideas. Lee and Shemilt (2003) see progression as a focus on the way in which pupils' ideas about history develop. Using the analogy of learning in physics, they explain that students do not just increase their factual knowledge when learning physics, they must also acquire a basic conceptual understanding of the subject to allow for more complex understandings to be built. The same holds for history. Teaching history requires an understanding of the conceptual challenges students encounter, and progression, rather than being a ladder which students ascend methodologically, can be considered as a matter of conceptual shifting. According to Lee and Ashby, "Once learning history is thought of as coming to grips with a discipline, with its own procedures and standards for evaluating claims, it becomes easier to envisage progression in history rather than just an aggregation of factual knowledge." (2000, p. 200).

2.6.1 The CHATA model of historical progression. The Project CHATA longitudinal study sought to uncover the progression of student ideas about second-order concepts such as evidence and historical accounts and how and why those ideas and beliefs changed over time. Drawing on the data obtained from Project CHATA, Lee and Ashby (2000) developed a sequence charting the growth of student ideas about historical accounts. At the simplest level, students see historical accounts as simply stories from the past; epistemically, this corresponds with the term Absolutism used by Kuhn et al. (2000)⁸. Over time, this view may shift to what Kuhn et al. refer to as Multiplism, in that stories about the past stem from eyewitness accounts and differences in those accounts are attributed to things like bias or that one account is simply untrue. At the other end of the spectrum, students see historical accounts as sources which can be questioned and turned into evidence to answer the questions posed. This view allows students to overcome the impasse created by the epistemic beliefs held in the earlier stages (Lee & Shemilt, 2003).

Figure 2. 2: Model of Lee & Shemilt’s historical progression (2003)



Lee and Ashby (2000) found that when dealing with conflict in historical sources, younger children tended to look for an authority, such as an adult or a book, whereas older children recognised that inferences could be made from sources. Furthermore, Ashby, Lee and Shemilt (2005) found there appeared to be an age-related (but not dependent) progression of ideas about the character of historical accounts when children aged between 7 and 14 were given conflicting accounts of

⁸ See Section 2.5.1 for an overview of the levels proposed by Kuhn et al. (2000).

the same historical event. Younger children tended to believe accounts at face value; when inconsistencies were shown, they maintained that one account was wrong. Older children, however, saw the accounts quite often as containing elements of bias but there was some understanding that accounts differ in relation to the questions posed. As Lee and Shemilt point out, understanding these preconceptions is crucial to the teaching of history; by ignoring them, educators may simply be papering over cracks rather than developing genuine understanding (2003). A diagram representing Lee and Shemilt's model of the key preconceptions children often hold about history is provided in Figure 2.2.

2.6.2 The Maggioni model of progression. Maggioni et al. (2004; 2009), drawing heavily from the work of Lee and Shemilt (2003), and influenced by the developmental model devised by Kuhn et al. (2000), describe the epistemic beliefs of students as being spread across three stances: the Copier stance, the Borrower stance and the Criterialist stance. In the Copier stance, students believe a precise copy of the past can be made and do not distinguish between the past (the facts) and history (an interpretation of the past). They believe the past can be captured in an encyclopaedic manner by collecting facts. Facts and concepts are taken as a given and are undisputable. Doing history in the Copier stance means using techniques that will make a print of the past.

In the Borrower stance, students use the features of the past that appear to be useful for answering their question but omit anything that does not verify their view. Doing history in the Borrower stance means students will use evidence, ask questions and construct arguments but only if these fit with their idea of the past. They understand that an exact copy of the past cannot be made because evidence is fragmentary. These students equate doing history with using tried and tested formulae to reconstruct the past as well as is possible. Borrower students also recognize that reconstructions of the past can be debated but see this debate as being led by experts who know more factual information than themselves. This stance correlates with the Multiplist stance put forward by Kuhn et al. (2000).

Students in the Criterialist stance construct interpretations of the past based on the questions asked and by engaging with sources. At this point, both knowing and doing history are interwoven. These students appreciate that facts and concepts can shift in meaning due to questions posed or other sources or contexts. They also understand that the arguments created are provisional and tentative as new questions emerge or when new facts are presented. As can be seen in Figure 2.3, there is a

considerable amount of crossover between the three models which allows comparisons to be drawn between children's epistemic thinking and their capacity for historical understanding.

2.6.3 Rösen's typology of historical narration. Historical consciousness, Rösen maintains, has no correct or incorrect form only differing values that define an individual's thinking about the past (Korber, 2008). To illustrate these differing values, he proposed a "typology of historical narration" framed around four broad categories: traditional, exemplary, critical and genetic (1993). Rösen's idea of hierarchical levels of historical consciousness bears more than a passing resemblance to the models discussed earlier. His critical and genetic modes of historical thinking, for example, parallel the methodological criteria of interpretation and explanation proposed by Kuhn, Cheney and Weinstock (2000), Maggioni, VanSledright and Alexander (2009) and Lee and Shemilt (2003) and though these models stem from different disciplines and account for a variety of age groups, the similarities are striking and warrant further investigation.

The traditional type of historical consciousness is, according to Thorp (2014), epistemologically rudimentary in that it is used, primarily, to maintain or support tradition. There is no critical assessment of history or historical accounts and they are considered at face value. The exemplary type of historical consciousness views history as a truth waiting to be discovered by applying the right kind of method. Historical narratives are viewed as exemplars or lessons for the present and though historical accounts are considered substantive, there are accepted means and methods on how to verify historical claims (Reich, 2015). A critical type of historical consciousness moves beyond a positivist view of history by questioning the issue of truth (Thorp, 2014). Traditional narratives are challenged and counter-stories are used to critique moral values. Thorp equates this form of historical consciousness with a form of relativism in that historical claims are equally weighted. Finally, the genetic type of historical consciousness takes neither an objectivist nor a relativist stance in regard to historical knowledge but rather appreciates that knowledge is "constructed by a community of enquiry that exercises mutual checks and balances within itself" (Seixas, 2006, p. 149). Individuals who display this form of historical consciousness realise that there are a set of standards used to validate historical claims and that all claims are contingent on the historical context in which they are created (Thorp, 2014).

Rüsen's influential typology of historical consciousness, though primarily focused on constructing "a theory of ontogenetic development of historical consciousness" (Rüsen, 2004, p. 78), views the nature of history with respect to the epistemological structure of historical knowledge (1993). Conceptualized as "a virtually anthropological category, covering every form of historical thinking" (Martens, 2015, p. 212), it involves more than an interest or knowledge of the past but a socially and culturally constructed set of mental operations that define "the peculiarity of historical thinking and the function it plays in human culture" (Rüsen, 1987, p. 284).

Although the models of epistemic progression discussed here stem from a variety of disciplines, they all share a developmental approach that moves the individual towards more sophisticated forms of epistemic reasoning about history. Figure 2.3, below, presents all four models, demonstrating how they are aligned and allowing for comparisons to be made across the models. This comparison helped inform choices around which model to use as a framework in the study. The crossover between the Kuhn and Weinstock (2002) model and the Lee and Shemilt model (2003) is informative as the levels of progression indicate how individuals may deal with knowledge of an epistemic nature. Following on from Perry (1970), Kuhn and Weinstock (2002) present a more accessible model for the researcher to use to identify epistemic positioning. While Lee and Shemilt (2003) present a model specifically targeted at the domain of history, the number of levels make it less accessible. The model proposed by Maggioni et al. (2009) builds from both of the earlier models and offers a viable, though derivative, framework. Rüsen's model (2004), rooted in the philosophy of history, also shares similar transitions that take the learner from a traditional view of history towards, what he terms as a genetic view. Rüsen's traditional and exemplary forms of historical consciousness are reflective of Kuhn and Weinstock's Realist and Absolutist position but there are subtle differences in that Rüsen's model is implicitly focused on the relationship between historical consciousness and epistemology while Kuhn and Weinstock (2002) focus explicitly on epistemic stances. While this study largely draws from the Kuhn and Weinstock (2002) model, the other three inform the research when applicable. This decision is informed by the focus in the study on epistemic beliefs as a general construct and how they impact on historical understanding.

Figure 2. 3: Crossover between the four models

Kuhn & Weinstock, (2002)	Lee & Shemilt, (2003)	Maggioni, VanSledright & Alexander, (2009)	Rusen (2004)
Realist: Assertions are COPIES of an external reality.	Pictures of the past: Students treat evidence as if it offers direct access to the past.	Copier History is equivalent to the past. Students think a (photo) copy of the past can be made.	Traditional Learning is by imitation (Mimesis). Historical accounts are taken at face value.
Absolutist: Assertions are FACTS that are correct or incorrect.	Information: The past is fixed and known by some authority; evidence is simply information.	Facts and concepts tend to have a one-on-one relation with doing history.	Exemplary Historical accounts are substantive but there are tried methods for verifying them
Multiplist: Assertions are OPINIONS freely chosen by and are accountable only to their owners.	Testimony: History is reported by those from the past. Conflict is settled by picking the best report.	Borrower: Borrows from sources to make up for mistakes or biased reporting. Often amounts to a compiling of information from different sources.	Critical Challenges traditional narratives and uses counter-stories to critique moral values. Claims are equally weighted.
Evaluativist: Assertions are JUDGMENTS that can be evaluated and compared according to criteria of argument and evidence.	Evidence in isolation: Statements about the past can be inferred from sources of evidence. Questions can be asked about sources that they were not designed to answer.	Criticalist: Uses disciplinary criteria in handling evidence from multiple accounts in order to answer specific historical questions.	Genetic There are a set of standards used to validate historical claims and claims are contingent on the historical context in which they are created
	Evidence in context: A source only yields evidence when it is understood in its historical context.		

2.7 Translating theory and practice

The idea that children’s epistemic beliefs can support or hinder their historical learning implies a pedagogy that is conscious of those beliefs and responsive to them. While considerable research has been conducted into pedagogical practice, the field is, at best, disjointed, and guidelines for practice are implied rather than explicit. The final section of this chapter presents a rationale for the use of a local instruction theory as a response to these issues. While numerous studies support the argument that primary children can develop rather sophisticated historical thinking skills through active engagement with historical evidence (Van Sledright, 2002; Foster & Padgett, 1999; Lee & Shemilt, 2004; VanSledright & Reddy, 2014), translating this research into actual classroom practice has been somewhat problematic. This may be partly due to the nuanced and complex nature of historical evidence itself and partly due to differences within the field of history education as to the purpose and process of using sources in the classroom (van Hover, Hicks, & Dack, 2016).

This issue has been articulated by several researchers in the field who claim that little is known about the pedagogical methods that foster the development of

historical thinking skills to allow students to interpret and construct history (Stoel, van Drie, & van Boxtel, 2015; Levstik & Barton, 2008; van Boxtel & van Drie, 2013). Duquette (2015) argues that the connection between concepts such as historical thinking, historical consciousness, or historical understanding is rarely adequately explained in much of the available research. Similarly, Roberts claims that the explicit procedures to be employed in the classroom are often obscured by a cloak of implied meanings (Roberts, 2011). Furthermore, he argues that the nature of history as a discipline has been lost in generic pedagogic models with near-universal principles, which, though useful, neglect the specific features that are unique to history. This argument is also raised by Wineburg, who maintains that the teaching of historical thinking cannot, and should not, be swallowed up by the broad arc of generic thinking skills (Wineburg, 2001, p. 79). Middendorf and Pace (2004), whose “Decoding the Disciplines” model attends to discipline-specific bottlenecks to learning encountered by third-level students, puts forward the same point. At primary and second-level, although sound recommendations can be found in the work of researchers such as Barton and Levstik (2004), Havekes, de Vries, and Aardema (2010) and VanSledright (2010), there is, as Havekes, van Boxtel, Coppen and Luttenberg (2017) argue, still much work to be done in creating domain-specific principles for knowing and doing history in the classroom.

If the skills of enquiry and analysis needed to engage in historical thinking are unique to history, then it may follow that targeted, disciplinary-based pedagogical approaches are required to progress them. Research in history education has contributed considerably to an appreciation of historical understanding, yet given the decades of research in this field, this jigsaw puzzle is far from complete. While many of the pieces have been constructed, there is a notable lack of systematic effort to connect the seemingly disjointed parts. This calls for a means to pull all those jigsaw pieces together in one cohesive framework; a framework of reference which will enable teachers to design activities targeted at the development of conceptual understanding. Though used almost exclusively in mathematics education, local instruction theories may help complete this jigsaw as by combining a specific disciplinary perspective with a teaching and learning perspective, they offer teachers such a framework. Local instruction theories are developed through the design and empirical testing of hypothetical learning trajectories. *A hypothetical learning trajectory* (HLT) can be defined as the set of focused activities that contribute to the

development of a local instruction theory (D. van Eerde, private communication, July 15, 2018).

2.7.1 Local instruction theories and HLTs.

HLT was first developed by Simon (1995) as a pedagogical device to use for both planning and clarifying the pedagogical moves involved in the teaching of mathematics for understanding. According to Simon, a HLT is a construct or a pedagogical tool a teacher uses to make sense of where the student is at and where the teacher may take them (Empson, 2011). It is referred to as “hypothetical” because an “actual learning trajectory is not knowable in advance” (Simon, 1995, p. 135). The purpose of designing a HLT is not to create the perfect instructional sequence but rather to deliver empirically grounded results that other researchers or practitioners can adjust to their own local circumstances (Bakker, 2004).

Based upon existing research concerning student thinking in the particular topic, the researcher predicts the thinking and learning that may occur when specific learning activities are employed in the classroom (Cobb, 2000). This approach relies on the researcher listening to and making an effort to understand the interpretations of the students as they work, as well as anticipating the path the learning may take as children engage with the planned instructional activities (Clements & Sarama, 2004). This aspect of the HLT differentiates it from other instructional design models in that the focus is not on breaking a learning outcome into subskills based on the teacher or the researcher’s thinking but instead is focused on the students’ own thinking and the researcher’s professional knowledge of progression (Clements & Sarama, 2004). Retrospective analysis of the HLT, as implemented in the classroom, contributes towards the development of a local instruction theory (LIT) for teaching a particular topic. A HLT deals with a small number of instructional activities; however, the LIT is a larger framework that includes a whole sequence (Gravemeijer, 1999). Gravemeijer describes a local instruction theory as an envisioned learning route relating to “a set of exemplary instructional activities that can be used as a source of inspiration” (2004, p. 107) in the teaching of a specific topic. A local instruction theory, therefore, offers teachers a framework of reference for designing and engaging students in activities created to develop understanding in a particular area.

Simon (1995) explains the relationship between the two using a holiday metaphor: the local instruction theory is a travel plan which the teacher uses to create an actual learning journey for a particular class of students. Teachers can use their knowledge of the local instruction theory to choose activities to design their own

HLTs for their particular classroom and students. Drawing on research from mathematics education, learning trajectories have been shown to assist teachers in planning and setting learning goals (Clements & Sarama, 2004). They also allow them to select instructional activities that build on and develop student thinking, thus developing conceptual understanding in rich learning environments (Gravemeijer, 2004).

2.8 Conclusion

In the last number of decades, research in history education has centred on fundamental questions relating to the nature of history, how students learn and understand the subject and the conceptual ideas they employ when engaged in historical activities. This research reveals them to be far more capable of engaging with abstract concepts and reasoning than once thought and demonstrates that they have a multifaceted capacity for historical understanding. As the literature on children's thinking in history highlights, with specific supports and the use of pedagogical practices such as enquiry-based learning, primary children have the capacity to engage with evidence in highly sophisticated ways. Such supports are generally of an epistemic nature and relate to the importance of making explicit to students the often implicit link between historical enquiry and the creation of historical knowledge.

Earlier in this chapter, an approach to learning history that combines elements of disciplinary and reflective enquiry was proposed. This proposal, in itself, is not new (Barton, 2012; Barton & Levstik, 2004; Levstik & Thornton, 2018; Haste & Bermudez, 2017; Bellino & Selman, 2012) but the importance of attending to the epistemic beliefs of learners and the attention given to the epistemological underpinnings of the various constructs relating to history education is, perhaps, novel. As has been highlighted in this chapter, there is a solid relationship between learning and the beliefs that learners (and educators) have about the nature of knowledge and the process by which it is acquired. Learning for conceptual understanding in history, therefore, is dependent on the interrogation of such beliefs. Figure 2.1 illustrates the centrality of epistemic beliefs in the teaching and learning of history. Emanating from this is the process of historical enquiry, the means by which students engage with historical content. The cycle of enquiry begins with the asking of questions, the type of which can dictate the form of enquiry used. For example, asking the question "what happened in Ireland in 1916?" would lead towards a disciplinary enquiry that focuses on the use of historical evidence. Asking

“why do we remember 1916?” carries the enquiry further and leads to a more reflective consideration of celebrations, memorials and contested histories.

In the last number of decades, research in history education has been particularly influenced by the historical method and many scholars have concentrated on the progression of disciplinary ways of historical thinking in the classroom (e.g., Wineburg, 2001; Seixas, 2004), specifically emphasising historical literacy and ways to reason historically when interpreting texts. This has led to an emphasis on compartmentalising historical thinking into sets and subsets of competencies to be evaluated and assessed rather than perceiving it as a means to engage with historical matter. This emphasis has also led to a concentration on the disciplinary aspects of historical enquiry.

The recent turn to historical consciousness has warranted a re-conceptualisation of the purpose of history as more and more national curricula are being influenced by this concept (e.g., Sweden, Germany, Ireland). Framing the teaching of history around the concept of historical consciousness has the potential to re-orient how and why it is taught; however, in recent years, historical consciousness has been subjected to the same fate as historical thinking as researchers attempt to dissect what is, perhaps, an essential feature of the human condition, into bite-size chunks that can be measured and qualified (e.g., Duquette, 2015; Körber, 2015). In fact, recently, Kölbl and Konrad (2015) noted that such work helps “in assessing historical consciousness in a more transparent and a more methodologically consistent way” (p. 26) and herein lies the problem. By linking historical consciousness to a list of assessment competencies to be achieved in the classroom, educators run the risk of ignoring the fundamental aspects of historical consciousness that make it a defining feature of what it means to be human. This concerns issues such as the use of the past in the present, the role of identity and heritage in understanding that relationship and the influence of formal and informal historical encounters on how individuals view the world (Nordgren, 2016). In the quest for accountability in the classroom, such features can become lost in translation.

As the four models of progression identified in this review of the literature highlight, individuals generally follow a sequence of developmental progressions as they mature. Although the concept of stages of development in thinking is often linked to the work of Piaget, similar to other areas of learning, such as mathematics (Dunphy, Dooley & Shiels, 2014), current research in the teaching of history has shown that linking stages of development with specific ages is questionable as

children's rate of learning is dependent on a range of variables such as culture, experience or even the task at hand. As Shemilt and Lee (2003) have found, children as young as seven can display deeper, more abstract levels of historical thinking than older adolescents.

Despite this variation in children's learning, patterns do exist and these patterns provide insights into how specific instructional activities can support student reasoning and understanding (Lee & Ashby, 2004; Bakker & van Eerde, 2015). These developmental pathways are central to what has been described as *learning trajectory education*. Learning trajectories can be defined as empirically supported hypotheses about ways in which students' thinking develops in response to explicit instructional experiences (Daro, Mosher, & Corcoran, 2011). Like the progressional models, learning trajectories are not built to assess but are designed to inform better history teaching and deeper conceptual understanding. The next two chapters present the methodology and methods used to design the learning trajectories that ultimately informed the local instruction theory for the teaching of history arising from this thesis.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter begins by identifying the research questions that underpin this study. Design-based research (DBR) was selected as the methodology that best suited answering these questions and a brief introduction to DBR is provided next. This is followed by a discussion on pragmatism, the paradigm chosen for this research. The subsequent section then provides a descriptive overview of my personal assumptions and beliefs as the means of clarifying my positionality as a researcher. DBR is often classified as an emerging methodology in educational research (Abdallah & Wegerif, 2014); therefore, a comprehensive rationale is given which outlines the reason why it was selected over a variety of other methodologies. This chapter also identifies the teaching experiment methodology, a specific form of design-based research, as the means by which the research was conducted. The development of a sequence of HLTs for teaching about historical evidence is also discussed in this chapter. The chapter concludes with an examination of the ethical considerations and the data collection and analysis process.

3.2 Research questions

Analysis of the literature relating to children's ideas about history (as discussed in the previous chapter), my own personal experiences in teaching primary history and a series of pre-intervention interviews and historical enquiries (discussed later in Chapter 4) were used to identify the epistemic bottlenecks children hold about historical evidence. I believe that these epistemic bottlenecks, just like bottlenecks on a roadway, can slow down historical understanding; therefore, identifying and challenging these became the pivotal objectives of this research study. These objectives were central to the development of the research questions which are:

- What epistemic bottlenecks inhibit the understanding of historical evidence?
- What approaches can support overcoming these epistemic bottlenecks?

A teaching experiment, which is a specific form of DBR, was selected as the methodology most appropriate to assess the effectiveness of the sequence of the teaching interventions I designed to reorient students' understanding of the nature of historical evidence and thus to answer the research questions. In the following section, a brief overview of DBR is given.

3.3 Design-based research

In the last number of years, interest in DBR has grown and it is increasingly seen as a viable methodology for educational research. DBR was originally conceived to address a specific issue in educational research, mainly the lack of meaningful impact research was having on educational practice. Indeed, Ann Brown (1992), considered one of the originators of DBR, began using this approach after finding that the positive effects of her controlled experiments with students failed to materialise in real classroom conditions. DBR was designed to bridge this disconnection between research and learning. Unlike laboratory research, it is conducted in the “messiness” of real classrooms and so caters for the complexities inherent in the school environment. The following section gives a brief introduction to DBR in order to situate this study. The rationale for choosing it as the most suitable methodology for this research will be discussed later in Section 3.7.

As a relatively new methodology, there is a continuing discussion concerning what exactly constitutes DBR. Despite a variety of terms to describe it such as design experiments, design theories, design research, educational design research (Juuti & Lavonen, 2006) and developmental research (Gravemeijer, 2004), they all share similar objectives, the primary aim of which is to “combine the intentional design of learning environments with the empirical exploration of our understanding of those environments and how they interact with individuals” (Hoadley, 2004, p. 205).

Cobb and Gravemeijer (2008) define DBR as a methodological approach in which design and research operate in a symbiotic relationship to solve practical problems in authentic environments. The Design-Based Research Collective (DBRC) includes the importance of theory development to their definition of DBR (2003) while Bakker and van Eerde’s definition adds the design of educational tools such as “computer tools, learning activities, or a professional development program” (2015, p. 3). Drawing on all of these definitions, DBR, as conceptualised in this study, is considered a methodology which deals with real issues in real classrooms. It endeavours to improve the design of learning interventions and to assess how these impact on the learner through a cyclic refinement of the design in order to generate theory, an output or a product. This approach to research is a pragmatic one and pragmatism is the paradigm through which this study is conceptualised. The following section explores the theoretical and methodological underpinnings for pragmatism and provides a justification for its use in this design-based research.

3.4 Pragmatism as a paradigm for design-based research

Pragmatism, generally regarded as the philosophical companion to DBR (Johnson & Onwuegbuzie, 2004), offers a series of underlying assumptions about knowledge and enquiry that reinforces the DBR approach and differentiates it from either purely quantitative methods, which are largely based on a positivist philosophy, or purely qualitative approaches, which are often founded on a philosophy of interpretivism (Rossman & Rallis, 2003). However, as Denscombe points out, there is often confusion over the common-sense use of the word pragmatic (implying a certain lack of principles behind a certain course of action) which is frequently interpreted by researchers as an “anything goes” approach to research (2008, p. 161). Likewise, Morgan (2014) argues that while many researchers employ pragmatism as a paradigm for social research, almost all have highlighted the practical rather than the philosophical aspects and ignored the importance of John Dewey’s concept of enquiry. Dewey’s form of pragmatism, rather than revolving around what he himself termed as the “epistemological industry” (Biesta & Burbules, 2003, p. 85) is centred on a repositioning of the philosophy from abstract philosophical terms and towards actual human experience. The following section explores its theoretical underpinnings and then provides a justification for its use in this design-based research. In the following section, these issues are explored in detail.

3.4.1 Pragmatism as a theory of knowledge. Peirce, often referred to as the founding father of pragmatism, considered it a method which clarified the meaning of concepts. James (as cited in Dewey, 1908) took this further by developing pragmatism as a theory of truth; claiming that ideas “become true just in so far as they help us to get into satisfactory relations with other parts of our experience” (Dewey, 1908, p. 100). Dewey further expanded these ideas by identifying pragmatism as a theory of enquiry and defining it as a philosophy of experience which acknowledges that social and moral existences, just like physical existences, are in a state of continuous fluctuation. Dewey described the pragmatist view of the measurable world as closely paralleling an “existential reality”, a reference to an experiential world comprised of differing layers; some objective, some subjective, and some a combination of the two. He described these as layers of “the stable and the precarious” and layers of “completeness, order ... ambiguities, uncertain possibilities” (as cited in Feilzer, 2010, p. 8).

Dewey viewed knowledge as developing from the active cognitive adjustments individuals make in response to their interactions with the environment. Enquiry, the process by which this is achieved, is not a passive activity in which the mind simply draws down ideas from observation of the world but rather, it should be understood as a process by which, when confronted with a new hypothesis to check, the individual actively manipulates the environment to do so, thus creating new knowledge. As Biesta and Burbles (2003) highlight, “experience itself is, as such, not (yet) knowledge” (p. 51). It is through action and experience that ideas are transformed into knowledge. For Dewey, knowledge and the attainment of knowledge, both function within the concept of action. (Juuti & Lavonen, 2006). Therefore, pragmatic philosophy can be considered as thought in action and thought shaped by action.

Dewey’s approach to pragmatism is positioned around addressing the central question: “what is the nature of human experience?” This positioning revolves around two fundamental sub-questions: “what is the source of our beliefs?” and “what are the meanings of our actions?” (Morgan, 2014, p. 1046). For Dewey, the answer is a cyclical one: beliefs have their origins in our prior actions and the outcome of our actions are found in our existing beliefs. Beliefs, therefore, are interpreted to create actions and actions, in turn, are interpreted to create beliefs. Human experiences create meaning by bringing both beliefs and actions together (Morgan, 2014). These experiences are, according to Dewey, always social in nature and influenced by interaction with others. As these experiences have been occurring since birth, the individual has already generated many responses. These are classed as habits which can adequately handle the demands for action in a semi-automatic state; for example, making a cup of coffee generally requires habitual actions. New experiences, however, require a process of conscious decision-making and reflection which Dewey describes as enquiry (Brown, 2012).

Dewey classifies enquiry as a particular type of experience by which problematic beliefs are analysed and settled through action. This is achieved by asking and answering questions which concern the likely consequences of using current beliefs for possible action (Morgan, 2014). For Dewey, the context of the experience is of importance, irrespective of whether the experience is based on either habit or enquiry. As Morgan points out, this dependency on context means that the ability to use prior experience to predict the consequence of a current action is “fallible and probabilistic” (2014, p. 1046). There is always the possibility that

previous experiences will not be enough to guide actions to produce the expected result because all experience is historically and culturally located (Biesta & Burbules, 2003). This, coupled with ever-changing circumstances, is why reasoning from past experience can only ever be imperfect (Morgan, 2014).

Dewey's philosophy of enquiry argues that enquiries are the interrogation of both theory and practice (Dillon, O'Brien & Heilman, 2000). Dewey also maintains that a pragmatic study identifies genuine research problems (Dillon et al., 2000) and that pragmatism aims to solve practical problems in the real world. Accordingly, a research problem is a legitimate enquiry if it is socially situated and grounded in such real-life problems. The following section explores the key characteristics of pragmatism as an approach to research.

3.4.2 Pragmatism as a research methodology. Pragmatism, as a research methodology, highlights the presence of multiple realities in any given situation; and therefore, provides for the choice of both qualitative and quantitative research methodologies to collect data and investigate the multifaceted phenomenon of social and natural contexts (Creswell & Clark, 2007). A pragmatic approach allows the researcher to be both objective and subjective when analysing the experiences of the participants. A researcher using pragmatism makes use of an eclectic approach in designing and implementing research methods by extracting from research designs only those which are contingent on the current need within the DBR study.

When using pragmatism as a research paradigm, addressing the contentious issues of truth and reality are generally circumvented as pragmatism accepts that there are both singular and multiple realities which are open to empirical enquiry (Feilzer, 2010). Instead, it positions itself toward solving practical problems in the "real world" (Creswell & Clark, 2007, pp. 20-28; Rorty, 1999). To take a pragmatic approach to research, the researcher accepts the organic and dynamic character of research while also accepting that concepts are refined and understood through action. This closely resembles the approach taken during design-based research studies in which theory and practice are developed concurrently.

Pragmatists hold what Feilzer terms as an "antirepresentational view of knowledge" (2010) which argues that research should not aim to accurately represent reality but to be useful, or in the words of Rorty to "aim at utility for us" (Rorty, as cited in Feilzer, 2010, p.8). In traditional educational research, existing theories are usually tested in controlled contexts and researchers plan instruction based on the principles that the theory and the associated results support (Edelson, 2002). In

design-based research, however, the goal is not to test whether the theory is successful (van den Akker, 1999) because both design and theory are mutually shaped by the research process. Instead, researchers employ design to use and refine theories continuously (Edelson, 2002) so that the theories “do real work” in practice (Cobb, Confrey, diSessa, Lehrer & Schauble, 2003, p. 10). Pragmatism underpins the goals of educational design research which aims to improve practice by solving problems in a real-world context. The ideas of John Dewey in particular, support the use of methods which suit the “messiness” of design-based research conducted in the natural setting of the classroom (Anderson & Shattuck, 2012).

The focus on the importance of the research question in design-based research rather than what Creswell and Clark describe as the “forced-choice dichotomy between post-positivism and constructivism” (2007, p. 27) is also influenced by its pragmatic underpinnings. Tashakkori and Teddlie (1998) argue that pragmatism is intuitively appealing largely because it avoids what they describe as “endless and useless” (p. 30) debates about concepts such as truth and reality. They advise the researcher to “study what interests you and is of value to you, study in the different ways in which you deem appropriate, and use the results in ways that can bring about positive consequences within your value system” (1998, p. 30). Feilzer argues that it may be far more useful for the pragmatic researcher to engage in “a reflexive research practice” that emphasises the nature of the research and, more importantly, a consideration of the values the researcher brings to the study (2010, p. 8). Grix (2010) also highlights the importance of communicating researcher positionality and argues that pragmatism requires that the researcher articulates this clearly. Researcher positionality and the values inherent in this study are discussed next.

3.5 The positionality of the researcher

Research can be defined as a methodical enquiry by which data are collected, examined and interpreted in order to understand, define, predict or control phenomena (Mackenzie & Knipe, 2006) and while the principal objective for a research study is to increase knowledge, the type and validity of that knowledge are contingent on the philosophical stance or paradigm the research is based on. This stance, or positionality, concerns the assumptions inherent in the study which are shaped by the researcher’s own values, experiences and beliefs. Positionality is often considered as an exploration of the researcher’s consideration of her own place within the many layers, power structures, identities, and subjectivities of the study

(England, 1994). Highlighting researcher positionality is an essential aspect of pragmatic research as this influences not only the choice of methodology and data collection but also the data selected for analysis and the analytical approaches adopted (Grix, 2010). Since this research sought to understand children's conceptions of history and how the interventions impacted on these, it was necessary to acknowledge my own pre-conceived notions about the children themselves and my own beliefs about knowledge and learning which are continuously shaped by my values, professional and personal experiences and my shifting identities.

The experiences and expertise I have gained in history education, academic history and primary and initial teacher education have played a significant role in forming my understanding of history. I graduated from St Patrick's College with a Bachelor of Education and History degree in 2003. In 2014, I enrolled in a Master of Education programme, selecting history, geography and local studies as my special options. In 2016, I was awarded the Michael Jordan Fellowship and transferred to the PhD track to complete my study in primary history education at doctoral level. I was also the History Co-ordinator in St. Barnabas' School and since I began teaching there, I was responsible for creating whole school plans and resources for the teaching of history, in particular, local history. I am also a founding member of a very active local history group. This academic background coupled with my years of experience as a primary school teacher and eight years of part-time lecturing in history education in St. Patrick's College and DCU have been instrumental in shaping my teaching philosophy and approach to history education.

As both a primary teacher and an initial teacher educator, I have always sought to ensure that the activities I design for my students develop their ability to think, do and talk history. This three-pronged approach provides them with the opportunities to pose and answer historical questions by undertaking research, engaging with evidence, interpreting sources and communicating their findings. This teaching philosophy is inspired by a constructivist-oriented enquiry-based approach to learning. While it is important that these philosophical commitments are articulated, I am also mindful that they may not be shared by other educators.

This study conceptualises children as active and constructive learners rather than as the passive receivers of information traditionally ascribed to them. Locating myself firmly within social-constructivist practices, I understand children as competent and capable decision-makers who construct knowledge through reciprocal, dialogical relationships with others. In light of this, the term

preconception is used to discuss children's emergent understanding of the discipline of history rather than the more common term *misconception* which implies not only a deficit understanding but infers that this understanding is wrong rather than developing. The capacity-building lens through which I view children can also be considered as a source of possible bias as there exists the potential to ascribe deeper meanings to children's engagements and comments throughout the study.

In terms of positioning myself within this study, I could be considered an "insider" (Herr & Anderson, 2005) in that I was born and raised (and still live) in the parish of St. Barnabas, which is a close-knit, inner-city village located in the heart of Dublin. A number of the children who participated in this study were my neighbours, children of my own friends or children I have known for most of their lives. I also attended St. Barnabas' School (the site of this study) myself as a child and returned there as a teacher in June 2003, where I taught senior primary classes for 14 years. My role as the researcher in this study, however, positions me, in many ways, as an "outsider" and so I rest somewhere in the middle of this insider/outsider continuum, juggling multiple roles, very much as an "outsider-inside". Further complicating the issue of my positionality within this research is the fact that I was also the class teacher of the class involved in Cycle 2 of this study and this created additional challenges that needed careful consideration.

In respect of the "highly situated nature" of DBR, Reeves (2006) observes that "design research is not an activity that an individual researcher can conduct in isolation from practice" (p. 59) and in many cases, participants are students in the researcher's own educational community (Herrington, McKenney, Reeves & Oliver, 2007). There are criticisms of the practice of teacher-as-researcher and several arguments suggest that the teacher's values and interest in both the subject and findings have implications for bias and subjectivity. The tacit knowledge that an educator accumulates over long periods in the field has both advantages and disadvantages. Logistically, such tacit knowledge is an advantage to the teacher-researcher as they often have long-term experience of the setting under study that would take an outsider much longer to acquire (Hammersley, 1993). Furthermore, the teacher's tacit knowledge and experience can be an advantage as they can be used to plan effective designs and anticipate where problems may be found. However, epistemologically, unexamined tacit knowledge can be "impressionistic, full of bias, prejudice, and unexamined impressions and assumptions" (Herr & Anderson, 2005).

One of the demands in conducting a DBR study is that the immense amount of data obtained throughout the study requires selection, collation and analysis by the researcher and all of these processes are subject to personal bias. As Cohen et al. note, “fact and interpretation are inseparable, and the selection of which events and data to include are, to some extent, under the control of the researcher” (Cohen et al., 2011, p. 540). Therefore, the researcher’s own context and ideology play a part in interpreting the environment and the ensuing interactions. While this can cause issues in regard to reliability and validity, issues that are inherent in any type of investigation, the triangulation of data and the outlining of my philosophical assumptions and ideas about history, presented in this chapter, work towards minimising researcher bias.

As Norris (1997) points out “a consideration of self as a researcher and self in relation to the topic of research is a precondition for coping with bias” (p. 174). In response to the considerable potential for bias whilst conducting research in my own place of work, and with children very familiar to me, I ensured to build protocols into the study to maintain personal checks and balances. I aimed to keep the participant and researcher voices separate as much as possible through the keeping of student and researcher reflective journals. As I was also delivering the interventions, my journal was completed at the end of each day whilst listening to the audio transcriptions of the interventions. In one section, I wrote any comments on the data and in the corresponding section, I wrote personal or subjective reactions to these. By attempting to separate these in this way, I hoped to reduce any of my own biases.

In light of the criticisms relating to the teacher as researcher, and in acknowledgement of the tensions that can arise as a result of the duality of the teacher-researcher position when both roles come in to play in classroom interventions, it was necessary to ensure that my roles throughout the study were specified very clearly from the outset. Also, to improve the reliability of the data collection, each session was recorded by audio and children completed history journals to ensure retrospective verification as well as a degree of independence from the researcher. In terms of the analysis of the intervention tasks themselves, I decided to use a hybrid approach to thematic analysis which combines both a data-driven inductive approach (Boyatzis, 1998) and a deductive *a priori* approach (Crabtree & Miller, 1999). van Drie and van Boxtel’s Theoretical Framework for Historical Reasoning (2008) was used to guide this analysis. Furthermore, the HLTs which underpin this research also support reliability by acting as guides in the formation of

the teaching experiment and in the retrospective analysis thus allowing for a degree of independence from the researcher (Bakker & van Eerde, 2013).

3.6 Philosophical assumptions

All research is founded on core philosophical assumptions about what constitutes valid research and which research methods are most suitable for the construction of knowledge; therefore, the challenge for the researcher is not to eradicate but rather to acknowledge the effects of those assumptions on researcher positionality. Pring states that “without the explicit formulation of the philosophical background – with implications for verification, explanation, knowledge of reality – researchers may remain innocently unaware of the deeper meaning and commitments of what they say or how they conduct their research” (2004, p. 90). Wilson and Stutchbury (2009) note that these philosophical ideas remain “largely hidden” in many studies despite the strength clarification brings to the research rigour (p. 57). This section discusses the important philosophical assumptions that have shaped the design decisions underpinning this research study.

The research idea was conceived as a result of my experiences as a primary school teacher working with primary aged children and is based on my belief that children’s perceptions of a subject can affect how they approach and learn within that subject. This research is grounded on the presumption that these preconceptions are intrinsically linked to children’s own epistemic beliefs about truth and knowledge which are presumed to be flexible and subject to change when challenged and addressed. Though these assumptions were based initially on my observations of children struggling with the subjects of Irish and Mathematics, my personal interest in, and love of history led me to explore children’s perceptions of history as a school subject. This avenue was further explored as part of a Masters of Education programme I began in 2014. One particular activity looked at the work of Waldron, whose study of Irish children’s perceptions of school history revealed that primary-aged children are not only interested in, and knowledgeable about the past but also display an emergent understanding of the nature and purpose of history (2004). Therefore, this research is based on a philosophical assumption that student perceptions or preconceptions of history, which for the main part are intangible and unconsciously held, can potentially affect their learning.

Having positioned myself as a pragmatic researcher within this study, some of the methodological decisions I have made as a result of this are outlined in the following section. Reflecting a pragmatist paradigm, I am mindful that a pragmatic

orientation rejects the development of explicit methodological identities such as, for example, the researchers' self-identification as either qualitative or quantitative researchers. In a pragmatist study, researchers are simply researchers and the terms "qualitative", "quantitative", "action research" and so on, refer only to the different routes the researcher takes to answer the research questions. Like Morgan (2007), I believe "it is impossible to operate in either an exclusively theory – or data-driven fashion" (p. 70) and so this research journey moves along an axis of objectivity-subjectivity under an inter-subjective sphere (Morgan, 2007).

One of the principal aims of this research was to determine student preconceptions about history. Reflecting the pragmatic position that beliefs are a result of experience, I acknowledged that these must be observed in authentic environments and so this study took place in three primary classrooms. I also recognised that these perceptions or beliefs, are, for the most part, intangible and unconsciously held and that a combination of dialogue and action would serve best to uncover them. In considering this, qualitative semi-structured interviews were used in order to encourage participants to describe their perceptions of history, and following this, historical enquiries were employed to allow me to view how these beliefs translated to action. Ascertaining students' historical perceptions involves concentrating on the relationship between the student and their experience of history. From this perspective, the focus for this research is not simply the discipline of history itself, nor indeed the student, but, rather, on the relationship between the two. Learning, as viewed in this study, is a qualitative experience which is dependent on the interpretations learners put on their experiences – the "internal relationship between the experiencer and the experienced" (Marton & Booth, 1997, p. 113).

3.7 Rationale for design-based research

Initially, experimental research was considered for this study as it involves the use of pre- and post-tests which can give subjective, quantitative results about the efficacy of an intervention. One strength of quantitative approaches is that they provide measurable observations or results which can indicate clear causality (Cook & Campbell, 1979). However, on closer inspection, a traditional experimental methodology did not entirely suit the context of this study because in a classroom environment maintaining strict experimental conditions is difficult, if not impossible, to achieve. As Juuti and Lavonen (2006) claim, with experimental research there is an inherent difficulty in controlling all the variables and in the classroom, some variables may be uncontrollable. As Freedman and Kim (2019) point out "controlled

trials ... can underestimate the complexity of learning ecologies, in which changing one set of variables may transform the entire system (p. 10). Furthermore, student experiences that occur outside of the classroom such as parental guidance or support also impact on the learning process.

Traditional experiments aim for experimental control as opposed to reporting learning as it actually occurs and, as this study is concerned with reporting that learning, random controlled trials that generate only quantitative descriptions were not deemed effective. As Brown (1992) argues, the insights derived from scientifically driven experimental research in education reduces the ability to understand the reality of learning as it happens in the classroom. DBR, on the other hand, is theoretically grounded and operates using conceptual and relational/semantic analyses to allow researchers to develop models of learning and teaching (Abdullah & Wegerif, 2014).

Table 3 1: Experimental research and design-based research

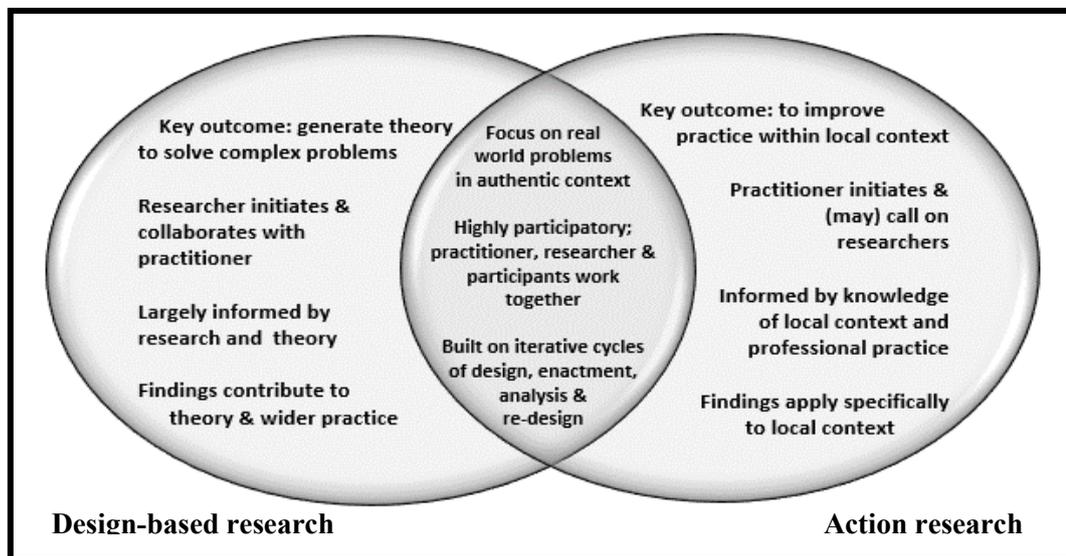
Experimental Research	Design-Based Research
Laboratory settings	Messy situations (classrooms)
Single dependent variable	Multiple dependent variables
Controlling variables	Characterising the situation
Fixed procedures	Flexible design revision
Social isolation	Social interaction
Testing hypotheses	Developing a profile
Experimenter	Designer and researcher
<i>Adapted from Abdullah and Wegerif (2014)</i>	

Though DBR and experimental research share several features, as can be seen from Table 3.1, there are considerable differences in each approach and it was apparent that traditional experimental research was unsuitable for this study. This study aimed to use student learning in the messiness of the classroom to design and improve pedagogical guidelines to address and challenge ideas about historical evidence. To do this, it was considered necessary to test, evaluate and refine these principles continuously and this called for design flexibility rather than fixed schedules. As Freedman (2019) points out, compared to randomized controlled trials or other experimental methods that test whether a given design works as intended, DBR is far more open-ended.

There is another methodology that is interventionist in nature and concerned with connecting theory to practice, and that is Action Research (AR). In fact, it could

be argued that AR and DBR are very similar (see Figure 3.1). Both close the gap between research and actual practice and both look to design interventions to solve real educational problems to improve teaching practice (Somekh, 1995). Both are also set in real-world contexts, are iterative, involve collaboration with the participants and both can produce theoretical outputs. However, Gravemeijer and Cobb (2006) argue that the goal of DBR, unlike action research, is to both refine a design intervention with the intention to improve practice as well as to refine theory. While an action research study can often help to resolve a practical learning problem, it generally does so without producing a design principle or a theoretical framework that can be extended by other researchers.

Figure 3. 1: Action research and design-based research



According to van den Akker, Gravemeijer, McKenney and Nieveen (2006, p. 2), “the first and most compelling argument for initiating design research stems from the desire to increase the relevance of research for educational policy and practice” and as has been outlined in Chapter One, this research aims to enhance student experiences of history while also improving teacher practice. The purpose of DBR according to Jutti and Lavonen is twofold: research about education and research for education (2006), the former having an intellectual objective to understand more about the process of teaching and learning and the latter having a more pragmatic purpose to improve teaching and learning praxis. Furthermore, according to Ruthven, Laborde, Leach, & Tiberghien (2009), DBR, with its focus on the contextual features of classroom environments, has the potential to develop learning environments and

teaching sequences designed to bridge the gap between codified disciplinary concepts and informal everyday ideas.

Jutti and Lavonen (2006) identify three important features that determine a DBR study: firstly, the design process is iterative; secondly, the objective is to develop an artefact to help teachers teach in a more focused way or pupils to engage in a process that leads to real learning and thirdly, it creates new knowledge about teaching and learning. Wang and Hannafin (2005) provide a useful summary of the attributes of DBR which distinguish it from other methodologies (see Table 3.2).

Table 3 2: Characteristics of design-based research

Characteristics	Features
Pragmatic	Design-based research refines theory and practice. The value of theory is assessed by the level to which principles inform and improve practice.
Grounded	Design is theory-driven and based on relevant research, theory, and practice. Design is carried out in real-world settings The design process is grounded in, and studied through, design-based research.
Interactive, Iterative and Flexible	Designers are involved in the design process and work with participants. Process includes iterative cycles of analysis, design, implementation and redesign. Initial plans are vague so designers can make deliberate changes as needed. Methods vary during different phases as new needs and issues arise.
Integrative	Mixed research methods are generally used to maximise the credibility Rigour is purposefully maintained and discipline applied appropriate to the development phase.
Contextual	The process, findings, and changes from the initial plan are documented. Research results are connected with the design process and the setting. The content and depth of generated design principles varies. Guidance for applying generated principles is needed.

Adapted from Wang and Hannafin (2005, p. 8)

As mentioned earlier, the messiness of real classrooms makes it difficult to implement randomized controlled trials. This practice-oriented study applied elements of quasi-experimental design, which is regarded as an appropriate approach for practice-based research (Handley, Schillingwer & Shiboski, 2011). A quasi-experiment is an empirical study of an interventionist nature. It is used to investigate the causal impact of an intervention on a particular population without random assignment. This study adopts both quantitative and qualitative elements to investigate the causality between the intervention and children’s epistemic understanding. The use of quantitative components can enhance qualitative studies concerned with causality by providing measurable interpretations (Harding & Seefeldt, 2013). Elements of this approach that were adapted for this study include

the use of pre- and post-tests and the non-random selection of the participating school and the classes involved. Notwithstanding this, the focus groups within the classes were randomly selected.

3.8 Validation and development studies in design-based research

Ruthven et al. (2009) make a distinction between *design as intention* and *design as implementation*. The former attends to the process by which a designed sequence is incorporated into the classroom environment and subsequently refined, whereas the latter concentrates on the construction of the design. In a similar fashion, Plomp (2013) proposes that DBR has two purposes which are to develop empirically-based answers to difficult problems in educational practice or to develop or validate theories about learning. These differing purposes have resulted in a distinction being made between design-based research studies that are aimed at development and those studies that focus on validation. Development studies concentrate on the creation of design principles and validation studies emphasise theory development or validation. This delineation has implications for the type of output expected from the research, as seen in Table 3.3.

Table 3 3: Types of design-based research

Type of study:	Research goal:	Twofold yield:
Development studies	Development of intervention:	(i) developing a research based intervention as solution to complex problem, <i>and</i> (ii) constructing (re-usable) design principles
Validation studies	Theory development and/or validation:	(i) designing learning environments <i>with the purpose</i> (ii) to develop and validate theories about learning, learning environments, or to validate design principles

Adapted from Plomp (2013)

Development studies often begin with the identification of an educational problem and are generally informed by prior research, particularly the study of existing interventions in the target area. Careful analysis of the existing body of research leads to the development of effective interventions to address the specific concept or educational issue. The other purpose of development studies is to construct design principles that are relevant for educational practice (Plomp, 2013). van den Akker (1999), identifies two types of design principles that can emerge from DBR studies. These are procedural principles that relate to the design methodology

or substantive principles that characterise the intervention. As Plomp (2013) explains, design principles (or heuristics) may support subsequent researchers in the selection and application of the most appropriate knowledge for subsequent development studies.

Validation studies focus on the design of learning environments or trajectories and aim to both develop and validate theories about learning in particular topics and contexts. Gravemeijer and Cobb (2013) prefer to use the term “design experiment” to define this type of study and argue that the use of “validation” can give a sense that the study relates to “checking” or “confirming”, which overlooks the exploratory nature of the approach. The purpose of this type of study is “to develop a class of theories about both the process of learning and the means that are designed to support that learning, be it the learning of individual students, of a classroom community, of a professional teaching community or of a school or school district viewed as an organization” (Cobb et al., 2003, p. 10). Gravemeijer and Cobb (2013) argue that validation studies aim to develop domain-specific instruction theories at several levels. These are 1) at the level of the instructional activities (micro theories), 2) at the level of the instructional sequence (local instruction theories) and 3) at the level of the domain-specific instruction theory. Although the differences between validation and development studies in DBR is, as Plomp notes, (2013) conceptually important, in reality, many design researchers combine both approaches.

There are a variety of interpretations relating to the function of HLTs and local instruction theories. Some researchers consider researcher-developed local instruction theories as an aid to assist teachers in planning their own HLTs for individual classrooms (Gravemeijer, 2004) whereas others view the HLTs as informing the development of a local instruction theory (Bakker & van Eerde 2015; Bustang, Dolk & van Eerde, 2013). As there was no underlying local instruction theory to support the development of a series of HLTs for understanding historical evidence, Bakker and van Eerde’s model (2015) was chosen for this research. Although this study aligns itself with Bakker and van Eerde’s model, it remains cognisant of other design-based research methodologies (Gravemeijer, 2004; Cobb et al., 2003; Collins et al., 2004; DBRC, 2003, Ruthven et al., 2009)

As this study aims to contribute towards the development of a local instruction theory, it can be considered a validation study; however, as it is the first of its kind to be developed, certainly in the context of Irish history education, it can

also be considered a developmental study because there are no design principles available from existing research. This research aims to identify emerging principles that may be actionable in future studies. In addition to being both a developmental and validation study, this research uses a very specific form of DBR known as teaching experiments. The following section explains the methodology selected for this study and outlines the teaching experiment's three constituent parts which are: experiment preparation, experimentation in the classroom and retrospective analysis.

3.9 Teaching experiments

Teaching experiments are predominantly associated with mathematics education and the teaching experiment methodology, influenced by the work of Vygotsky, was extensively used in Soviet studies relating to mathematics education before the 1970s. Teaching experiments initially emerged in the United States to address two main concerns: the gap between the practice of research and the practice of teaching and to illustrate the conceptual strategies undertaken by students (Steffe & Thompson, 2000). Through teaching experiments, which are contextual rather than prescriptive, researchers endeavour to understand the mathematical concepts and operations of students. Steffe and Thompson contend that the primary purpose for using a teaching experiment methodology is “for researchers to experience, first hand, students’ mathematical learning and reasoning” (2000, p. 267).

Teaching experiments allow researchers to test hypotheses about how students learn and reason within in the classroom environment. Throughout the course of a series of teaching episodes, new hypotheses are usually formulated. These hypotheses are tested by means of observing and recording data (Steffe & Thompson, 2000). These data illustrate how students construct particular concepts. The data collected then informs the development of further teaching lessons. Therefore, teaching experiment research is a cyclic, exploratory process which aims to understand the thinking processes of students (Steffe & D’Ambrosio, 1995). There are three essential components to the teaching experiment methodology: preparing for the experiment (including the development of a HLT), experimenting in the classroom and conducting retrospective analysis (van Eerde, 2013). An overview of each of these three components is provided in the following section.

3.9.1 Experiment preparation. In the mid-seventies, researchers Steffe, Hirstein and Spikes (1976) found that working with students for relatively short periods did not allow for a clear understanding of students’ thinking, particularly in the area of mathematics. They realised that acquainting themselves fully with the

way students operated in the specific area of interest required full immersion into their thoughts and actions. Sometimes referred to as *exploratory teaching* this process allows the researcher to familiarise themselves with the students' ways and means of operating to expose the schemes that students have formed through spontaneous development (Steffe & Thompson, 2000). A classroom teaching experiment normally commences with the clarification of learning goals and with a thought experiment in which the researcher "envisions how the teaching-learning process might be realized in the classroom" (Cobb, 2000). To achieve this, the researcher formulates a HLT. The development of the HLTs for this particular study, along with the theoretical underpinnings, will be discussed in Section 3.11.

3.9.2 Experimenting in the classroom. In this study, the teaching experiment phase was conducted in three cycles. The first cycle was the preliminary teaching experiment, the goal of which was to examine the feasibility of the HLT design and to evaluate and improve on it for the next cycle. The preliminary teaching experiment in this study was conducted with five students. During the preliminary teaching experiment (Cycle 1), the five students completed an epistemic understanding instrument, engaged in a historical enquiry, completed a semi-structured interview and experienced the activities contained in the initial HLT1. Cycle 2 employed the same instruments but used a modified HLT (called HLT2) and took place with the whole of 4th Class. Cycle 3 also used the same instruments and all the students from another 4th class experienced a modified HLT3.

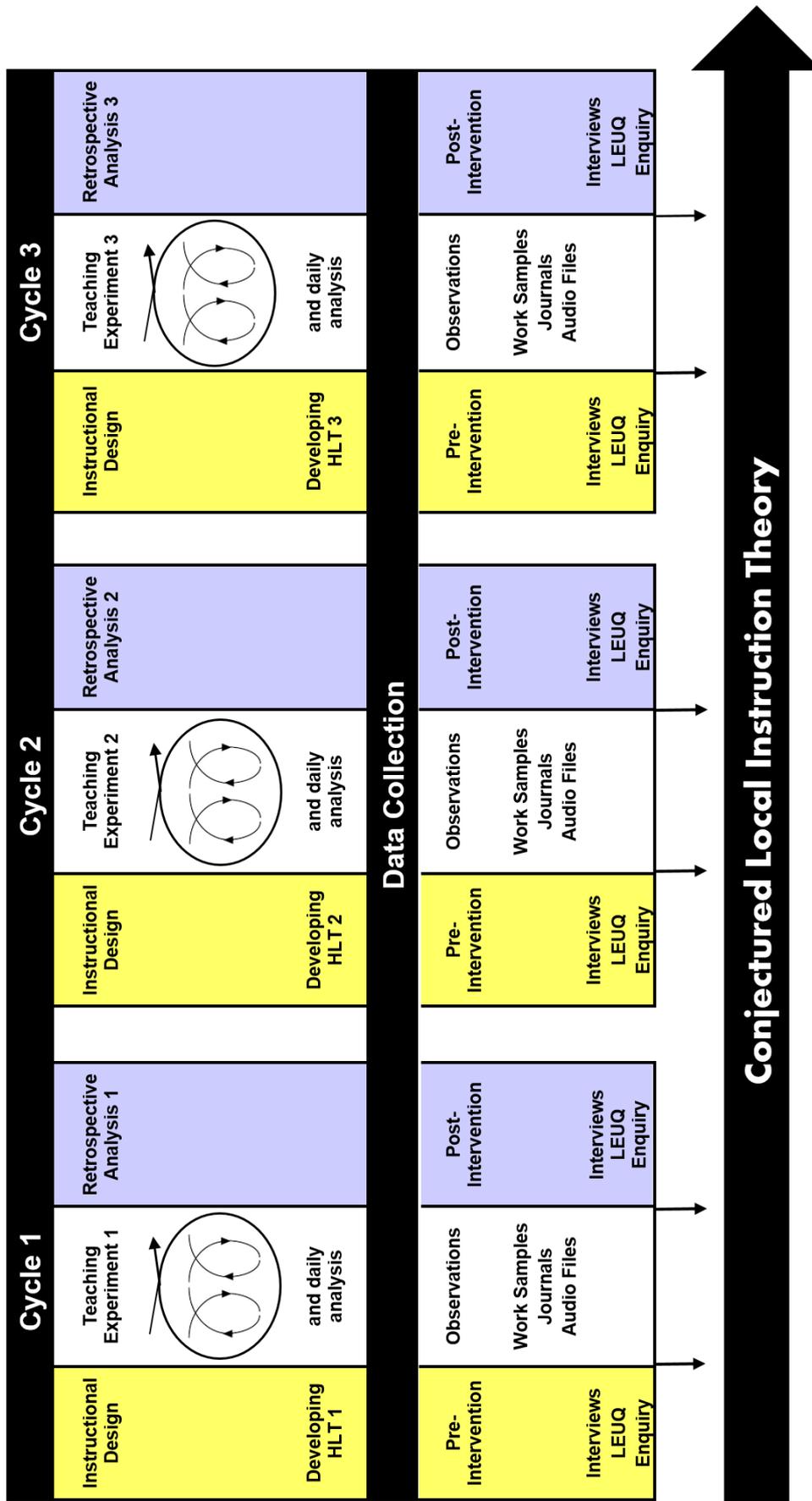
Teaching experiments, by their nature, generate large amounts of data; therefore, as recommended by van Eerde (2013), data collection in Cycle 2 concentrated on six students for the pre- and post-intervention activities as this enabled a full analysis the data of this focus group. Data were collected from the whole group during the interventions and used for corroboration and additional interpretation of what was found in the focus group (van Eerde, 2013). For Cycle 3, six students participated in student interviews, questionnaires, and the epistemic understanding instrument. As with Cycle 2, all students were recorded engaging in the intervention activities. Figure 3.2 shows how the cycles of the DBR Teaching Experiment for this study were conceptualised and enacted.

3.9.3 Retrospective data analysis. The third phase in a teaching experiment is retrospective analysis, the purpose of which, according to Gravemeijer and Cobb (2006) depends on the theoretical intent of the research. With this study, the intention was to contribute to the development of a local instruction theory to support the

student's understanding of the nature of historical evidence. The role of the HLT in this phase of the study was to guide the data analysis. During this analysis, the hypothesized learning was compared with the learning that was actually observed during the lessons. It is this corroboration that forms the base for the development of an instruction theory (van Eerde, 2013). Figure 3.2 illustrates how all the elements of a teaching experiment work together to create an instruction theory.

In summary, the teaching experiment methodology was selected for this study to allow me to experience student learning and reasoning at first hand. The strength of the teaching experiment methodology is that it takes place in the natural environment of the classroom, and so, replicates more closely the actual environment in which children learn. This proximity allowed me to get closer to understanding the powerful concepts and procedures children constructed as they engaged with a range of activities (Steffe & Thompson, 2000). The teaching experiment also allows researchers to identify what Steffe and Thompson refer to as "constraints" (2000, p. 268) that are present and persist in the student's own disciplinary knowledge despite efforts to eliminate them. This methodology also enables the researcher to test the appropriateness and usefulness of new materials and techniques designed to attend to these constraints. In addition, the retrospective analysis of the data can locate the particular aspects of an intervention that promote conceptual growth. As this research is concerned with both identifying and attending to student constraints in the learning of history in an Irish primary classroom, this methodology was deemed the most suitable for this study. The term DBR Teaching Experiment will be used from here on to describe this specific form of DBR.

Figure 3. 2: Teaching experiment design



3.10 Hypothetical learning trajectories

Although there are a number of interpretations of HLTs (Clements & Sarama, 2004; Gravemeijer, 2004; Simon, 1995), most researchers agree that a HLT has three essential elements. These elements include: student learning goals, instructional learning activities and a conjectured learning process or pathway. Figure 3.3 shows how the three elements contribute towards the design of a local instruction theory. The student learning goals of the HLT influence the development of the instructional activities as these are designed to support the learning goals. The overarching objective of the HLTs designed for this study was to support students in building their understanding of the nature of historical evidence. As the sequence of instructional learning activities were carried out, these tasks were accepted or adapted depending on the learning that occurred and whether it matched the conjectured learning process. Where necessary, the instructional sequence was modified and improved by analysing: the tasks, student engagement and the classroom environment to establish whether the learning goals were realised (Clements & Sarama, 2004).

As explained, earlier, the HLT has a number of functions depending on the phase of the DBR Teaching Experiment project. As well as guiding the teaching interventions, it is also used to analyse the data during the retrospective analysis phase. How the conceptual tools provided by the selected theories were used to analyse the findings during the retrospective analysis of the data are explained in Chapter Four. The following section outlines the theoretical framework that underpinned the teaching approaches and strategies used.

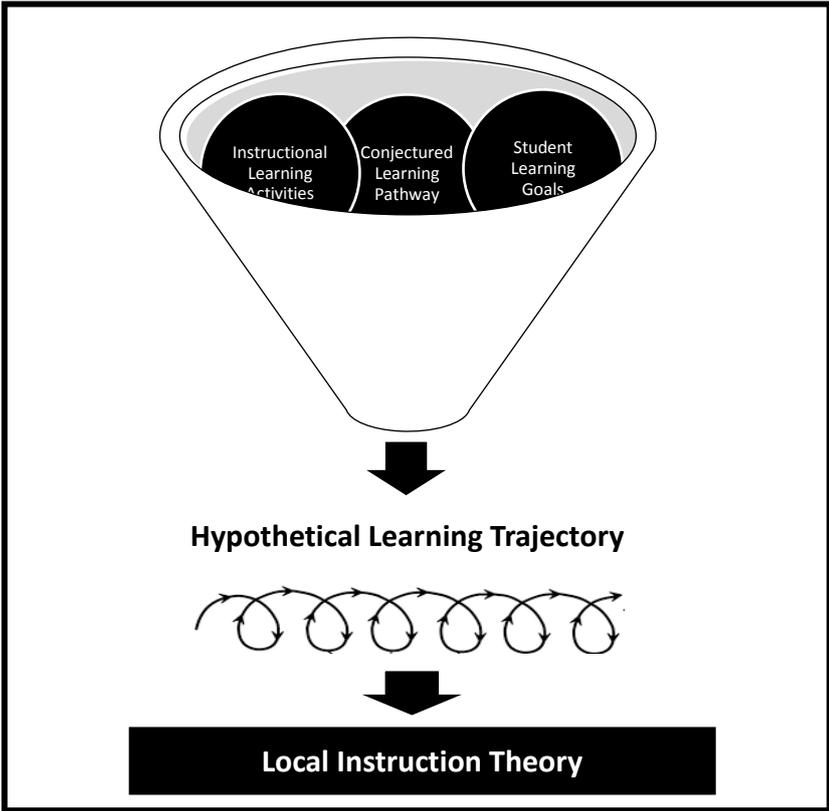
3.11 Developing a HLT for using evidence

The HLT for a given topic is built upon two key foundations: previous research relating to the topic and an analysis of how the topic is portrayed in the curriculum (van Eerde, 2013). The following section outlines the development of the HLTs in response to the analysis of both of these foundations.

3.11.1 Previous research. To create a HLT, the researcher conducts a literature review to identify how the topic is traditionally taught, the common problems or preconceptions students have with the topic and innovations that have been made to improve learning (van Eerde, 2013). The findings relating to the review of the literature were discussed in detail in Chapter Two and how they influenced the construction of the HLTs is briefly discussed here. The literature review allowed for an analysis of the recurring problems relating to children's understanding of

historical evidence and the identification of the epistemic bottlenecks students generally encounter with the topic (Bakker, 2004). Several reoccurring bottlenecks were identified which included beliefs that history is the single narrative as found in the textbook, the past and history are the same and that history cannot change because it has already happened. A series of HLTs were designed in response to these findings. These HLTs included activities to explore the role of the historian in recognising accounts and evidence, the role of historical significance, how to use a researcher-designed sourcing heuristic when analysing evidence and how to use evidence to support a historical argument. Collectively, these HLTs are referred to as HLT1. The design of the HLTs was also supplemented by a detailed analysis of the pre-intervention interviews and historical enquiries the children engaged with (these findings are discussed in greater detail in Chapters Five and Six).

Figure 3. 3: HLT design

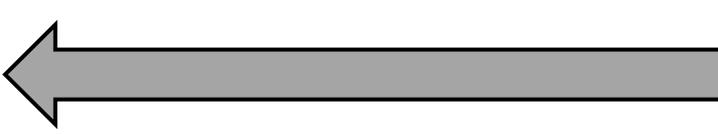


3.11.2 Using evidence in the Irish Primary History Curriculum. The development of a HLT often begins with an analysis of how the subject of the design study is conceptualised in the curriculum (Bakker, 2004). The IPHC (NCCA, 1999a) endorses the holistic development of the child through engagement with local, national, European and global issues. Emphasis is placed on critical historical

thinking skills such as change and continuity, cause and effect, using evidence, time and chronology and historical empathy. The curriculum documents support the increased engagement of the child in developing decision-making skills, critical thinking and the promotion of democratic citizenship through exploring how “people’s interpretations of the past can exert a powerful influence on their attitudes, beliefs and actions today” (NCCA, 1999b, p. 9). Engaging with these skills in an increasingly complex manner allows students to develop competence in the critical analysis and interpretation of source materials and allows them to see history not simply the story of the past but rather “our attempt to reconstruct and interpret it.” To facilitate this, the curriculum’s content is arranged by strands and strand units delineated into four class bands, all of which are complemented by a skills and concepts strand referred to as Working as an Historian. This strand is of particular interest to this study as it includes, among others, the skill of using historical evidence (NCCA, 1999a).

Figure 3. 4: “Using evidence” strand of IPHC

5th & 6th Class			
Examine and use critically a wide range of historical evidence Develop some skills in the location and selection of evidence Distinguish between primary and secondary sources Ask questions about a piece of evidence Compare accounts of a person or event from two or more sources Make simple deductions from evidence Recognise that evidence may be incomplete or biased Appreciate that evidence can be interpreted in a number of ways	3rd & 4th Class		
	Examine and use a wider range of historical evidence, especially that which may be found in the locality or which is connected to local history Ask questions about a piece of evidence Summarise information in, and make simple deductions from, a single source of evidence	1st & 2nd Class	
		Examine a range of simple historical evidence Begin to distinguish between fictional accounts in stories, myths and legends and real people and events from the past	Infants
			Encounter some simple historical evidence



As can be seen in Figure 3.4, “Using Evidence” is central to each band level and increases in complexity as students move through class levels. The Teacher Guidelines accompanying the IPHC note the fragmented and often conflicting nature of evidence and cognisant of the complexity of historical evidence, an approach to using historical sources is outlined for the senior classes (aged 8-12). Students should interrogate sources and their origins and corroborate and contextualise with the purpose of drawing conclusions about the past. This allows them to see that history

itself is built on interpretations of accounts of the past which are subject to change. In essence, students are encouraged to “treat evidence in the way which characterises the historian’s methods” (NCCA, 1999b, p. 13). The key objectives contained in the 5th and 6th class band were used to frame the learning goals of the HLTs.

3.12 Theoretical framework for a HLT

Developing a local instruction theory to support teaching requires the formulation of a sequence of theory-informed learning trajectories (Bustang et al., 2013; Gravemeijer & Cobb, 2006). A number of examples of these can be found in mathematics education research. For instance, Ruthven et al. (2009) suggest Brousseau’s Theory of Didactical Situations (TDS) as an effective intermediary for designing teaching sequences. This theory is built around the concepts of a-didactical and didactical situations and includes a body of concepts relevant for teaching and learning in mathematics classrooms (Ruthven et al., 2009).

Realistic Maths Education (RME) is another intermediary often used in mathematics education (Gravemeijer & Stephan, 2002). RME is a domain-specific instruction theory for mathematics that was developed in the Netherlands. RME has been built on the work of Freudenthal and his interpretation of mathematics. According to Freudenthal, mathematics as a human activity and as a discipline should be related to reality, revolve around children’s experiences and be relevant to society in order to be of human value (Freudenthal, 1968). In keeping with the principles of RME, mathematics lessons should give students the “guided” opportunity to “re-invent” mathematics by doing mathematics. This means that in mathematics education, the focal point should not be on mathematics as a closed system but on the process of mathematization (Freudenthal, 1968). Likewise, in history education, the focus has shifted from the memorisation of facts to the construction of historical knowledge by doing history.

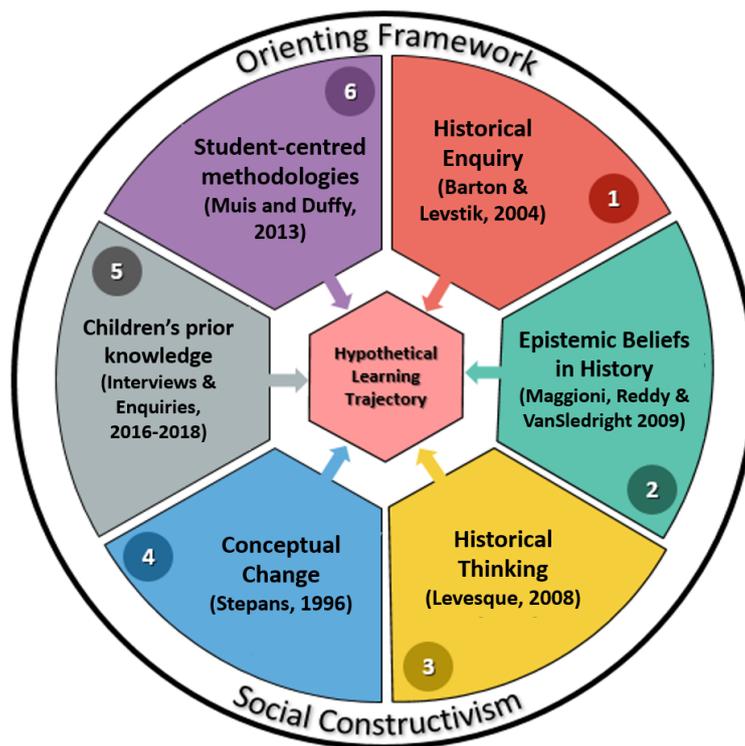
While there is no corresponding instruction theory in history education, much work has been done in developing children’s capacity for historical engagement and there is some alignment between the products of this work and the defining features of RME as Table 3.4 shows. The parallels between RME and some of the key features that have emerged in history education research provide a useful starting point for designing a HLT for using evidence in history. A more detailed discussion of these principles is discussed in the next section.

Table 3 4: RME-inspired model to underpin HLT for historical evidence

Principles of Realistic Mathematics Education	Principles guiding the HLT for using evidence
<p>Activity principle: Mathematization refers to mathematics as an activity is best learned by doing where students can experience a similar process to that by which mathematics was invented.</p>	<p>Enquiry based history: A pedagogical approach that introduces students to the process of "doing" of history through using evidence to investigate historical questions. Students engage with primary sources and contemporary accounts using methods similar to those used by historians which highlights how historical knowledge is constructed and how historical arguments are created (Barton & Levstik, 2004).</p>
<p>Reality principle: Children work with realistic contexts from real-world situations.</p>	<p>Progression in Understanding Historical Accounts: Lee and Shemilt (2004) identified a set of levels to depict students' understanding of evidence. Building on this, Maggioni and VanSledright identified three epistemic levels of historical understanding: Copier, Borrower and Criterialist (2016).</p>
<p>Level principle: Students pass through various levels of mathematical understanding: from the ability to invent informal context-related solutions, to the creation of various levels of short cuts and schematizations, to the acquisition of insight into the underlying principles</p>	<p>Historical thinking: A set of critical thinking skills for evaluating and analysing evidence to construct an account of the past. There is no separation of content and process. Both are intertwined (Lévesque, 2008).</p>
<p>Inter-twinement principle: The subject is not split into distinctive learning strands. Solving rich context problems often means applying a broad range of mathematical cognitive tools and understandings.</p>	<p>Social constructivism: human development and learning is seen as socially situated and knowledge is constructed through interaction with others. (Bruner, 1966).</p>
<p>Interaction principle: Mathematics is considered as a social activity where students share their strategies and inventions with each other.</p>	<p>Conceptual Change: A teaching strategy where students are provided with opportunities to voice their current conceptions, investigate the plausibility of these conceptions and then reflect on and reconcile the differences (Stepans, 1996).</p>
<p>Guidance principle: teachers must be able to anticipate student understandings and skills. Educational programs should contain scenarios which have the potential to work as a lever in shifting students' understanding of mathematical concepts. (van den Heuvel-Panhuizen, 2000)</p>	

The following section explores each of these principles in further detail and pays particular attention to how these contribute toward the theoretical framework that underpins the HLTs for this study. Figure 3.5 provides a visual representation of how all the elements of the framework fit together.

Figure 3. 5: Theoretical framework for a HLT



3.12.1 Social constructivism as an orienting framework. Orienting frameworks are often used in DBR and can be described as a form of “meta-theory” whose purpose is to provide researchers with a tentative guideline on what to teach and how to teach it. (Stoel, van Drie, & van Boxtel, 2015). Orienting (diSessa & Cobb, 2004), intermediate (Ruthven et al., 2009) or background (Gravemeijer & Cobb, 2013) theories function as the foundation of the research and influence both the design and the way data are interpreted; however, once the researcher has decided on the background theory, it does not emerge in the actual study but is treated as a given throughout the project (diSessa & Cobb, 2004). Most design research studies, which have a focus on learning processes, are informed by grand learning theorists, such as Piaget, Vygotsky, Bruner and Dewey, primarily because their work is focused on knowledge and understanding as it relates to learning (diSessa & Cobb, 2004).

Cobb et al. (2003) advise selecting a “grand” theory to frame DBR studies. Likewise, Prediger, Gravemeijer and Confrey (2015) recommend a theory which allows the researcher to design and create a classroom environment where students can engage in meaningful tasks and are afforded plenty of opportunities to participate on an individual or collective level. This allows the researcher to then concentrate on capturing student thinking through their successes and difficulties in order to refine

the research design and conduct retrospective analysis of the data. A number of assumptions about learning generally dictate how successfully the orienting framework operates (Prediger et al., 2015). Firstly, the theory must treat the students as agents in their own right who have their own perspectives, experiences and points of view which are actively used to make sense of events. Secondly, the learning theory must provide the space for the students to express their ideas and, thirdly, the theory selected should recognise that thought and action are linked and influence each other. These assumptions underscore the attention that must be given to student discourse, therefore, the theory must allow for meaningful student interaction.

Ruthven et al. (2009) note that the principles of task designs depend on the chosen theoretical framework. In this study, social constructivism was adopted as the orienting framework because the theory provides the means by which I, as the researcher, can pay close attention to student discourse and explanations. Vygotsky's social constructivist theory of learning posits that individual cognitive growth occurs on two planes, first through interpersonal interaction and then individually (Laister & Koubek, 2001). Cognitive growth may be defined as a continuing dialogic activity between the child and society which enables the child to assume the social knowledge and norms which allow him/her to create his/her own "self" (Laister & Koubek, 2001). Social constructivist theory also posits that learning occurs within what Vygotsky terms as the Zone of Proximal Development where students can, with the help of adults or other children, grasp concepts and ideas that they cannot understand on their own (Karpov, 2013; Bruner, 1966). A teacher or experienced peer provides "scaffolding" to support the student's evolving understanding or the development of complex skills. Active strategies such as collaborative learning, discourse, modelling, and scaffolding are all approaches employed by the HLTs in this study to support student dialogue and facilitate intentional learning.

3.12.2 Children's prior knowledge. As can be seen from the majority of studies cited in the literature review, a key thread linking them together is the importance and strength of students' prior knowledge. The How People Learn (HPL) studies (Donovan & Bransford, 2005; Bransford, Brown, & Cocking, 1999) provide solid research to support student learning. Indeed, one of the guiding principles of HPL highlights the importance of addressing student preconceptions about how the world works in order to activate deeper levels of learning. Initial understandings students hold can have a formidable influence on how they integrate new concepts and information. These ideas are often based on the students' own life experiences

and while they can be of benefit, as Lee cautions, “ideas that work very well in the everyday world are not always applicable to the study of history.” Children, for example, often view the past as fixed and given. While this view holds in many day-to-day situations, in the study of history “we cannot hold what we are saying up against the real past to see whether it matches” (Lee, 2005, p. 31). It is the everyday ideas about a given past that make the features of “doing history” difficult for students.

Lee emphasises the importance of teachers engaging with these initial understandings as neglecting to do so may result in students failing to grasp new concepts and they may simply assimilate the new knowledge into their existing preconceptions (2005). The teacher’s task, therefore, is to draw out the emergent understandings students hold and use them as the “foundation upon which the more formal understanding of the subject matter is built” (Donovan, Bransford, & Pellegrino, 2010, p. 15). As Lee and Shemilt (2004) argue, failure to address these clusters of preconceptions denigrates the teaching of history to little more than “firing blindly into the dark: we may get lucky and hit one of our targets, but we are much more likely to damage our own side” (p. 31).

The importance of prior knowledge on children’s historical understanding has been highlighted by many studies internationally. VanSledright and Brophy’s (1992) classroom-based study, which must be noted, was conducted with fourth graders who had not yet received any systematic instruction in history, unsurprisingly found that none of these students were familiar with the interpretative nature of historical studies. They also found that students drew on a multitude of sources, including their own prior knowledge, when evaluating historical claims. In addition, they also indicated that children were unable to appreciate the complexities of history in the same way that they could in regard to the physical sciences, because, in contrast to direct engagement with the natural world, children’s experiences with history were “remote” (1992, p. 841). Seixas (1996) challenged this claim by emphasising how traces of the past from both the human and natural landscape leave an indelible mark on the mind of a child. This view was supported by Bain who emphasised the importance of student’s beliefs and prior assumptions when teaching history (2005) and Cooper (2015) who saw the past as a dimension of children’s social and physical environment with which they interacted with from birth.

VanSledright later revised his position by outlining the importance of socio-cultural histories, such as television or life experiences, which can act as anchors to

either aid or impede the development of historical thinking skills (2014); furthermore, he posited that these anchors may lead students to hold with “counterproductive epistemic beliefs” such as equating history with the past and dichotomous thinking (p. 29). As Levstik notes “if prior knowledge and extensive experience in a particular domain are major influences on knowledge restructuring and theory building in younger children, then educators need to think carefully about how to facilitate that engagement” (2008, p. 31). This study argues that specific interventions, focused on challenging children’s conceptual understanding of the nature of historical evidence, is a means to facilitate such engagement. The HLT for this study is built upon the premise that students hold powerful epistemic beliefs about the nature of history and this in turn influences how they approach historical evidence. Each activity is purposely designed to elicit student ideas about historical evidence beforehand and to challenge epistemic bottlenecks through purposeful engagement with sources.

3.12.3 Epistemic beliefs about history. Traditionally, historical knowledge has been understood to be the gathering and recall of facts and dates from textbooks (Bourdillion, 2013) but in recent decades, this fact-focused approach has been replaced by an emphasis on the development of both historical thinking skills and substantive knowledge. Despite this conceptual shift, the traditional mode of history teaching, often reliant on the textbook, prevails, and so perpetuates the illusion that there is one collective, fixed story of the past. According to Epstein (2012), this reliance on the text contributes to one of the main misunderstandings students possess about the nature of historical knowledge. She argues that many young people uncritically accept sources such as textbooks in the belief that history is an objective recording of the past rather than an interpretation of the residua of that past.

While a reliance on the textbook can contribute to a misunderstanding of the nature of history, there are a considerable number of other factors at play. Teaching for conceptual understanding in history should begin with challenging the epistemic beliefs about history the students already have which may be formed due to prior knowledge, previous teaching or other factors such as influences from home, culture or media sources (Bransford, Brown & Cocking, 1999). The literature review and the results of a series of semi-structured interviews and pre-intervention enquiries conducted in a selection of primary school classrooms (which will be discussed in detail in the next chapter) were crucial in confirming and identifying many of the

epistemic bottlenecks students hold about the subject. These core ideas were central to the development of a series of HLTs for using evidence in history.

3.12.4 Student-centred methodologies. Research has shown that although students are more comfortable with teaching methodologies and approaches which are in line with their current epistemic beliefs, significant learning occurs when these beliefs are challenged. Lea, Stephenson and Troy (2003) also found that student-centred methodologies which challenge current conceptions naturally align with a constructivist approach to teaching. Studies on children's epistemic beliefs about mathematics also found that certain instructional strategies fostered the use of epistemic resources to benefit learning in students which actually improved understanding and performance (Muis, 2004). Muis and Duffy (2013) identify these constructivist teaching strategies as teacher modelling of critical thinking, a multifaceted approach to problem-solving and making connections to prior knowledge. They found that the application of these strategies worked towards developing more sophisticated epistemic beliefs in students. The HLTs, therefore, incorporate a mix of constructivist learning strategies and teacher modelling approaches to facilitate student conceptual understanding.

3.12.5 Conceptual change. Limón (2002) defines conceptual change as the means by which an individual's existing knowledge is modified by new information, and as a result of this process, new outcomes in the areas of knowledge and conceptual understanding become possible. This process is often imperceptible and occurs unobtrusively; however, there are times when conceptual shifting requires a more conscious and concentrated effort (Murphy & Alexander, 2016). In these cases, students often do not acknowledge new ideas or new understandings in a specific domain unless there is a recognition that their current concepts are not adequate or fit for purpose. Teaching for conceptual change, then, requires students to experience some sort of contradiction with their expectations.

There are a number of competing theories on the nature of conceptual change but this study draws from the knowledge-as-theory perspective (Posner et al., 1982). Posner et al. (1982) drawing on Piagetian learning theory, and in particular, the concepts of assimilation and accommodation⁹ suggest that if students are to adjust their thinking or beliefs about a topic, they must experience dissatisfaction with their current beliefs, see the new conception as both intelligent and credible and see it as

⁹ see Section 6.2 for further explanation of accommodation and assimilation

useful in a range of new situations. Teaching for conceptual change is conceptualised in this study as a teaching strategy where students are provided with opportunities to voice their current conceptions, investigate the plausibility of these conceptions and then reflect on and reconcile the differences (Coştu, Ayas, Niaz, Ünal, & Çalik, 2007).

A variety of conceptual change models exist but Stepans' six-stage Conceptual Change Model (CCM) was selected for this study for a number of reasons: it is constructivist in nature, suitable for activity-based teaching, promotes a learning strategy which places the student at the centre of the learning and encourages them to identify and confront their own preconceptions in tandem with those of their fellow pupils (Stepans, 1996). The steps of Stepans' model are detailed in Table 3.5. Although initially designed for use in mathematics and science education, the collaborative nature of Stepans' model is also appropriate to the type of thinking and activities that characterize historical enquiry. Stepans' CCM complements the enquiry process in that it is premised on the principle that students communicate with each other and the teacher to find solutions to their questions and are provided with the opportunity to discuss their findings and understandings. The CCM was adapted to for use in history classes and is used to develop the particular sequence of the activities of the HLTs (See Table 6.1).

Table 3 5: Conceptual Change Model (Stepans, 1996)

Original Conceptual Change Model (Stepans, 1996)	
<ul style="list-style-type: none"> • Commit to an Outcome • Expose Beliefs • Confront Beliefs • Accommodate the Concept • Extend the Concept • Go Beyond 	

3.12.6 Historical thinking and historical enquiry. As discussed in Chapter Two, influenced by the revolutions in cognitive and social theories, historical thinking emerged as a conceptual construct which moves history away from the traditional view of the subject and instead places emphasis on developing in students the epistemological and heuristic skills that are more characteristic of an interpretative approach (Wineburg, 2001; Lee, 2005). While there are a number of definitions of the term “historical thinking” most concur that it entails an emphasis on cultivating student competencies in the disciplinary processes of historical work.

Many of the activities developed for the HLT are framed around the concept of historical thinking and have a particular emphasis on the skills needed to engage in historical enquiry.

Each unit of the HLT ends with the students working on an enquiry question. This allows them to put into practice the conceptual ideas encountered in the unit. For example, the first enquiry is found in the final activity of the first HLT and asks “What were the Vikings really like?” The children are given two contrasting accounts of the Vikings from contemporary sources. The enquiry question at the end of the second unit asks children to consider “Who is the most significant person in the world/Ireland?” and children use their knowledge of historical significance to arrive at their top five people. The third enquiry question is based on documentary and photographic evidence about Rosa Parks and asks “Why was this photo taken?” and the final enquiry is found at the end of the final HLT on argumentation and asks “Why did Titanic sink?”

To enable children to critically appraise historical sources, I drew on Wineburg’s sourcing, corroboration and contextualising heuristics (1991) to design a heuristic to be used as a scaffold to support historical analysis in primary classrooms. I named this heuristic ICEACT (Identify, Contextualise, Explore, Analyse, Corroborate and Take it further). As discussed earlier, a HLT is comprised of a small number of instructional activities (Gravemeijer, 1999) and four HLTs were designed for Cycle 1. These were 1) the nature of history, 2) historical significance, 3) using a historical thinking heuristic (ICEACT), and 4) historical argumentation. For the purpose of readability, these four HLTs will be referred to hereafter as HLT1, HLT2 or HLT3 depending on the cycle involved. Table 4.6, in the following chapter, gives an overview of HLT1 which was designed using: the theoretical framework described in this chapter, the findings from the literature review and the results of the pre-intervention instruments.

3.13 Ethical considerations

Ethical approval was sought and obtained from the Research Ethics Committee (REC) of St. Patrick’s College, Dublin City University and the ethical protocol, as laid out by the University was strictly observed throughout all phases of the study. A letter outlining the nature and purpose of the study was sent to St. Barnabas’ School (a pseudonym given to the school for the purpose of ensuring pupil anonymity) requesting permission to conduct the study. I then met with the principal of the school and orally outlined the structure and nature of the research. A plain

language statement was also sent to the Board of Management and the study was accepted and ratified at their next meeting (see Appendix A).

3.13.1 Ethical procedures for research with children. This research was supported by an ethical framework which views children as rights holders. Informed by the work of Waldron (2006) who argues for an emancipatory approach to research which recognises children as socially competent, this research uses a participatory framework in which the research is conducted with rather than “on” children to ensure their voices are heard (Waldron, 2006). The activities the children engaged with were also firmly rooted in social constructivist principles which provided the basis for meaningful and collaborative discourse.

Influenced by the participatory approach to research with children used by Waldron and Pike (2006), I created and showed the children a Prezzi presentation which contained both child-friendly information about the types of research we conduct in our everyday lives and an introduction to more structured research including a small class-based research project. This mini-project introduced them to the idea of a research question (What Friday school clubs would children in this class like to do?), how to collect and analyse data and how to produce results to answer a research question. I then introduced my own research study and the children offered ideas on how to gather data about history. Children’s opinions were welcomed throughout the process and children were provided opportunities to become actively involved in different stages of the research. This included activities such choosing the topic of some historical enquiries and commenting on their own audio data.

3.13.2 Minimising risk of harm. The study was examined to assess for any potential risk or discomfort posed for children and measures were put in place to mitigate potential harm arising from the research process. These included the careful selection of appropriate images and activities and protocols to suspend the research project if a child’s safety or well-being was negatively affected.

3.13.3 Informed consent and assent. In accordance with the ethical protocol of the REC, measures were taken to ensure that the children had been given the required information (see Appendix B) and were supported in developing an adequate understanding of the research. Parental and/or guardian (informed) consent was collected for each child to participate in the study (see Appendix C & E). The child’s agreement to participate (informed assent) was sought independently and in an appropriate manner and adequate information about the project’s aims, methods and potential outcomes was provided in a child-accessible form (see Appendix D).

The children were given time to assimilate the information, ask questions and consult with others as necessary before deciding whether to assent. Children were also made aware that their participation was voluntary and that they were free to withdraw at any time without any negative consequences attached to this decision. Each participant was provided with Plain Language Statements and Informed Consent Forms. Outlining the voluntary nature of participation, provisions for data protection and clear, unambiguous details of the research, these forms also eliminated possible ethical concerns relating to issues of coercion, deception and infringement of participants' privacy (Creswell & Clark, 2007; Marshall & Rossman, 2006).

3.13.4 Confidentiality and anonymity. The data were collected with the consent of the participants and the children were informed as to who would have access to the data and for what purpose. The principle of anonymity was observed, as far as was possible, in that individual participants and the school were given pseudonyms in all of the research documentation.

3.13.5 Child protection and well-being. The research was carried out in accordance with Children First: National Guidance for the Protection and Welfare of Children (Department of Health, 1999). Procedures were put in place in case any child protection concerns arose during the research which needed to be reported. These included reporting in accordance with the school's Child Protection Policy, monitoring for the child's safety and well-being and maintaining policy commitments.

3.14 Validity and reliability

This study is a teaching experiment which is a form of design-based research, and so, has a particular approach to validity and reliability (Cohen, Manion, & Morrison, 2011). Validity refers to ensuring that the research measures what it sets out to measure and reliability refers to the independence of the researchers (Bakker & van Eerde, 2015). Validity can be internal or external.

3.14.1 Internal validity. As with any intervention, there is the possibility that students can perform better on the post-test due to a number of issues. For example, a number of events may have occurred in the time span between the pre and post-tests which may impact on post-test results (Campbell & Stanley, 1963). Also, maturation may have occurred in the time-lapse between both events. In fact, the effect of taking the pre-test can also be a factor as the student may have developed a familiarity with the instrument. For example, IQ tests taken a second time often result in a 3-5 point increase (Cook & Campbell, 1979). The selection of aspects of quasi-experimental

design may also pose threats to internal validity because the different groups from each cycle may not be comparable at baseline.

To support the internal validity of data collection, data triangulation was used through the collection of a range of data such as interviews, observations, field notes, students' work, and audio recordings. This allowed for more insight as well as providing verification. During the retrospective analysis of each cycle, the conjectures generated were tested for specific episodes and supplemented through data triangulation using other data material. The implementation of successive teaching experiments also made it possible to test the conjectures developed in earlier experiments in later iterations (Bakker & van Eerde, 2013). Theoretical claims were corroborated where possible with selected transcripts to provide a rich and meaningful context

3.14.2. External validity. External validity relates to the generalisability or transferability of the findings from what is the specific context of a classroom to other contexts (Bakker & van Eerde, 2015). One limitation of this type of research is the extent to which the estimated impact of the teaching intervention would be similar if it were replicated in a different location, at a different time, or aimed at a different group of students. However, Anderson and Shattuck (2012) have argued that being situated in a real educational context provides an element of validity to the research by ensuring that the results can be used to assess, inform, and improve practice in a similar type of context. To contribute to the generalisability of these results, a detailed and clear outline of the methods and analysis used is provided so that the study can be replicated (Rossman & Rallis, 2003).

3.15 Conclusion

This chapter outlined the philosophical and theoretical positions that I adopted for this study and these were underpinned by a pragmatist philosophy. Complementing this philosophy is my own personal view of knowledge, which considers knowledge construction as experiential and influenced by social experiences. Pragmatism also aligns with my personal view of history in that both share the central belief that understanding the world is achieved through experiences and actions and that this occurs through a process of enquiry. Both are also built around the tenet that knowledge is acquired through reflection and action. This view of knowledge has had implications for almost every aspect of this study from the design of the research questions to the choice of methodology, including the decisions made around the theoretical models adopted.

The central aim of this study was to provide a practical, theoretically and empirically founded approach to developing primary students' capacity for engagement with historical evidence. To enable this, a DBR Teaching Experiment was employed in three Irish primary classrooms. The decision to locate the study in the real environment of the classroom was guided by the pragmatic belief that my understanding of the children's capacity to learn and reason is best realised in the environment where such learning takes place.

The methodology selected for this study was also influenced by this. I adopted the DBR Teaching Experiment methodology because it enables the researcher to experience students' learning and reasoning at first hand (Molina, Castro, & Castro, 2007). Usually qualitative in nature, DBR Teaching Experiments aim to investigate learning in context, through the design and systematic study of specific forms and styles of learning in a manner in tune with the nature of learning and education (Cobb et al., 2003). The theoretical models adopted for this study were also influenced by its pragmatic underpinnings. For example, there are a number of conceptual change models available and each carry fundamental, epistemological ideas around the construction of knowledge. The model selected for this study is derived from Piaget's concepts of accommodation and assimilation and reflects the pragmatic view of knowledge construction. Likewise, social constructivist theory was selected as the orienting framework informing the design and development of the teaching interventions as it complements my understanding of pragmatism as experiential and influenced by social interaction. These interventions were designed to be collaborative learning activities which incorporated scaffolding and encouraged student discourse. The next chapter outlines the research instruments and the methods of data analysis for the study.

CHAPTER FOUR: METHODS

4.1 Introduction

This chapter provides a detailed account of the research instruments and data analysis methods used to answer the research questions. It commences with a discussion on the school and the participants involved and this is followed by an overview of the cycles involved in the DBR Teaching Experiment. The connection between the research questions and research instruments is then established. The methods particular to the study and the procedures used for collecting the data are also outlined. This chapter also identifies thematic analysis as the means by which the data were analysed.

4.2 The school

For the purpose of anonymity, the pseudonym St. Barnabas' Primary School is used to refer to the school in which the research study was situated. St. Barnabas' is a co-education, Catholic school with 189 children on roll. St. Barnabas' is also a Delivering Equality of Opportunity in Schools¹⁰ (DEIS) school and is located within Dublin's inner city. As a designated DEIS school, it qualifies for free school lunches, a book rental scheme and additional funding under the Schools Completion Programme, which is part of the Department of Education and Skills' DEIS strategy targeted at early school leavers. The average primary school cycle in Ireland is eight years long. Schools generally have two years of infant classes, followed by classes 1 to 6; however, the Reception Class in St. Barnabas' is a pre-school class and so a large number of children are enrolled in the school for 9 years. The remaining classes follow the traditional cycle of Junior Infants, Senior Infants and then First class through to Sixth Class. At present, there are nine mainstream classes and these are supported by a Resource Teacher, Learning Support Teacher, a shared Home School Liaison Officer and a Language Support Teacher. There are also two dedicated Special Needs Assistants in the school.

The St. Barnabas' Primary School Whole School Plan for History sets out a broad syllabus for each class level which corresponds with the content of the IPHC

¹⁰Launched in 2005 by the Department of Education and Skills, DEIS (Delivering Equality of Opportunity in Schools) is a national programme designed to addressing the educational needs of students from disadvantaged communities. (see www.education.ie). All schools participating in DEIS receive additional resources including extra staff and funding, access to literacy and numeracy programmes, Home School Community Liaison Schemes and the School Completion Programmes. Deis also means 'opportunity' in Gaelge.

(NCCA, 1999a). The school has adopted the History Quest (Fallon, 2006; 2012) school textbook series from classes 1 to 6. The innovative content of the teaching interventions designed for this study represented a very new approach to learning history for the students involved in Cycle 1 and Cycle 3 of the study. Students from Cycle 2 were familiar with enquiry-based practices in history and had engaged with a variety of evidence throughout the school year the study took place; however, they had not been introduced to specific sourcing heuristics.

The selection of these particular classes was guided by the content and objectives of the Using Evidence strand of Irish Primary History Curriculum. Although Using Evidence features in the curriculum for junior classes, it is focused specifically on two objectives which are: to “examine a range of simple historical evidence” and to “distinguish between fictional accounts in stories, myths and legends and real people and events in the past” (NCCA, 1999b, p. 26). As this study is based on using a variety of forms of historical evidence, including written evidence and multiple accounts of the same event, it was decided to situate the DBR Teaching Experiment within the third/fourth class bands.

Table 4. 1: Participants involved in the whole study

	Cycle 1	Cycle 2	Cycle 3
Participants	-----	23 students	18 students
Age	Age: 9-10	Age: 10-11	Age: 10-11
Gender	Girls: 2 Boys: 3	Girls:14 Boys: 9	Girls: 8 Boys: 10
Focus Group	Students: 5	Students: 6	Students:6
Class Teacher	Emily	Caitriona	Roseanne
Intervention Teacher	Caitriona	Caitriona	Caitriona

A list of students (the sampling frame) from third class was used to select the participants for Cycle 1 of the research. Each student was given a number and using a random number generator (www.randomizer.org) students were selected to form the focus group (Johnson & Christensen, 2014). As can be seen in Table 4.1, for Cycle 1, five students from a class of fifteen were selected using random sampling. Random sampling is a probability sampling technique whereby students are selected randomly from the class cohort (Shorten & Moorley, 2014). This ensured that the sample was representative of the population of third class students as each member of the class had an equal probability of being included in the study. Cycle 2 and

Cycle 3 of the study were conducted with the whole class, but to facilitate the collection of data, six students were selected from each cycle, again using random sampling. These were chosen to act as the principal participants. van Eerde (2013) recommends the use of such focus groups when there are time constraints or when a large amount of data is to be collected. The pre- and post-intervention activities were carried out with these primary participants but, as stated earlier, the entire class played a part in the collection of data during the actual interventions (via their verbal comments, their written work, their oral presentations, and their artistic representations).

Table 4. 2: Participants involved in the pre- and post-intervention activities

Cycle 1	Participants	Age	Gender
	Sammy	9	Male
	Calvin	10	Male
	Danny	9	Male
	Rachel	9	Female
	Sofia	9	Female
Cycle 2			
	Dawn	10	Female
	Róise	10	Female
	Seoda	9	Female
	Jenna	10	Female
	Gavin	11	Male
	Daire	10	Male
Cycle 3			
	Caoimhe	10	Female
	Eimear	10	Female
	Katelyn	10	Female
	Danka	10	Female
	Ivan	11	Male
	Callum	11	Male

Table 4.2 outlines the focus groups involved in the pre- and post-interventions. The participants for Cycle 1 of this study were five children from third class. These children were aged between nine and ten. There were three boys and two girls in this group. There was a wide range of achievement among the participants in Cycle 1 as evidenced by their results in national testing in literacy and mathematics. All of these students were from the immediate area surrounding the school. In Cycle 2 of this study, there were 23 fourth class students aged between nine and ten. There were 14 girls and nine boys in the classroom. Of the 23 students, five had non-Irish ethnic backgrounds, the remaining students were Irish born and

the majority of their families lived for generations in the immediate local area. As with the cohort from Cycle 1, there was a wide range of achievement in the classroom with three of the students scoring Standard Ten (STen) scores of 10 in both literacy and mathematics standardised tests¹¹ in the previous two years. Five children received additional support in both literacy and mathematics. The participants for Cycle 3 of this study were 18 fourth class students aged between ten and 11. There were ten boys and eight girls in the classroom. Of the 18, four had a non-Irish ethnic background. The remaining 14 students were Irish born and, like the class involved in Cycle 2, the majority of their families lived for generations in the immediate local area. There was a wide range of achievement in the classroom with two of the students scoring a STen of 10 in literacy. Four children received additional support in both English and mathematics.

4.3 Overview of the DBR Teaching Experiments (Cycles 1, 2 and 3)

As highlighted in Table 4.1, I delivered each of the teaching interventions across all cycles. Also noted in this table is the fact that I was the classroom teacher of the students involved in Cycle 2 of the study. Cycle 1 of the DBR Teaching Experiment began on the 11th January, 2016 and concluded on the 29th January. An overview of the approximate times of each activity is given in Table 4.6. Cycle 2 began with student interviews and enquiries on 22nd February, 2016 and the teaching interventions began at the beginning of March with approximately three sessions per week and continued until the start of May. There was a three week Easter holiday during the intervention. Cycle 3 interviews and student enquiries began on 20th October, 2017 and the teaching interventions began 15th November. Due to timetabling issues (school celebrations, standardised testing and Christmas break from 22nd December, 2017 to 8th January, 2018 plus a mid-term break of one week in February), this section of the DBR Teaching Experiment took a little longer than anticipated but concluded at the end of February. Post-intervention interviews concluded in early March, 2018. Each cycle contained 4 HLTs and on average, each unit took approximately one and a half hours to deliver. The duration of the lesson units for each intervention is given in Table 4.3. The actual breakdown of times for each activity in Cycle 2 and 3 is given in Table 6.6.

¹¹ A STen score of 1, 2 or 3 suggests a child may have difficulties in one of the areas tested. A STen score of 8, 9 or 10 may suggest the child is a high achiever in the area tested.

Table 4. 3: Timeframe of the study

	Cycle 1	Cycle 2	Cycle 3
Pre-Intervention Activities (Per instance)	11th Jan, 2016 LEUQ (20 mins) Interviews (40 mins) Enquiries (60 Mins)	22nd Feb, 2016 LEUQ (20 mins) Interviews (40 mins) Enquiries (60 Mins)	20th Oct, 2017 LEUQ (20 mins) Interviews (40 mins) Enquiries (60 Mins)
Intervention (HLT) (Total Instruction)	18th Jan, 2016 (5hrs 10 mins)	2nd Mar, 2016 (6hrs 15 mins)	15th Nov, 2017 (6hrs 30 mins)
Post-Intervention Activities (Per instance)	29th Jan, 2016 LEUQ (20 mins) Interviews (40 mins) Enquiries (60 Mins)	5th May, 2016 LEUQ (20 mins) Interviews (40 mins) Enquiries (60 Mins)	31st Mar, 2017 LEUQ (20 mins) Interviews (40 mins) Enquiries (60 Mins)

Each cycle of the research followed the same pattern outlined in Table 4.3. To obtain baseline data about the students' current epistemic beliefs, the Levels of Epistemic Understanding Instrument (LEUQ) developed by Kuhn and Weinstock (2002) was used. Semi-structured interviews were also conducted to gather information about students' ideas and attitudes towards history (see Appendix F for the interview protocol). These interviews were recorded and transcribed. The method of transcribing is outlined in the data collection section of this chapter. The children also engaged in a pre-intervention historical enquiry, based on the death of King William Rufus, to assess how they approached and used historical evidence. The children were audiotaped as they engaged with the enquiry question: *The Death of King Rufus: An Accident or Assassination?* using a range of primary and secondary sources. For this activity, the students were given no instructions or advice on reading and interpreting the sources as the objective was to gather data on the students' current approach to using historical evidence.

The students were then exposed to a series of teaching interventions in which the key skills of historical thinking, as outlined in HLT1, the modified HLT2 and HLT3 were taught through the context of historical enquiries. Recordings (of the children working with evidence) were later transcribed to provide a rich source of data. The full content of the teaching interventions is included in Appendices K, L and M of this study. Each teaching intervention began by eliciting students' existing knowledge and then introduced the lesson by framing it as a question to be solved. It was conjectured that focusing on the interpretative and investigative nature of history from the beginning of each intervention lesson would work towards breaking down

the notion of history as fixed and unchanging. Details of the retrospective analysis of the HLTs are described later in the chapter. Following the intervention, the focus group completed the LEUQ and were interviewed again. A different post-intervention enquiry based on Oliver Cromwell and the Siege of Drogheda was also used.

4.4 Research questions

According to Abdullah and Wegerif, (2014), DBR stands alone as an independent paradigm in that it is neither fully positivist nor fully interpretivist but rather is driven by pragmatist assumptions guided by the problem of the study. Invalidating the need to choose between either qualitative or quantitative paradigms, DBR instead focuses on the centrality and importance of the research questions and this approach guided the choice of methods for this study. (Bakker & van Eerde, 2015). This research looks to provide a considered and detailed account of the relationship between epistemic beliefs and Irish primary children's capacity for engagement with historical evidence. Founded on the hypothesis that children's preconceptions about history are linked to their epistemic beliefs about knowledge, I put forward the argument that these may be flexible and subject to change when challenged. In light of this, the research questions focus on a desire to increase an understanding of how primary students conceptualise and engage with historical evidence and to explore the nature of that understanding with particular reference to how it may be best supported in the primary classroom. Table 4.4 below illustrates how the research questions have shaped the structure of this study and also explains how the research instruments selected work towards answering the research questions. The individual instruments outlined in the diagram are explained in further detail in the following section.

Table 4. 4: The Research Questions

How children’s capacity for using historical evidence can be developed in a senior Irish primary classroom	
<p>Q 1 What epistemic bottlenecks inhibit the understanding of historical evidence?</p> <p style="text-align: center;"> 1 2 3 </p>	
<p>Q 2 What approaches can support overcoming these epistemic bottlenecks?</p> <p style="text-align: center;"> 4 2 </p>	

4.5 Research instruments

Assessing epistemic beliefs is a challenging task primarily due to the intricate nature of the construct. Part of this challenge may come from the premise that they are to a large extent “unconscious, if not tacit” (Schommer-Aikins, 2002, p. 115). In fact, some researchers question the existence of epistemic beliefs in young children, while others accept the construct but question the ability of children to discuss or verbalise abstract ideas about knowing and knowledge (Moschner, et al., 2008). Despite the complications outlined above, research has shown that children as young as four years old can begin to understand that the perspective and knowledge of other people may be at variance with their own perspectives and knowledge (Kuhn, 2011).

Although research into epistemic beliefs and learning strategies are gaining popularity in the field of education, many of these studies are situated around those of third-level students, older adolescents and adults (Moschner, Anschuetz, Wernke, & Wagener, 2008) with relatively few dealing with children. It was necessary, then, to employ measurements which would be not only appropriate to the age of the children but also indicative of the approximate epistemic level at which they were operating. The literature relating to epistemic cognition indicates that interviews, ill-structured problem scenarios and questionnaire measures are the most prevalent methods used to uncover information about epistemological beliefs and so a selection of these methods are employed in the course of this study to illustrate the epistemic positioning of the participants.

4.5.1 Levels of Epistemic Understanding Questionnaire. The Levels of Epistemic Understanding Questionnaire (LEUQ) developed by Kuhn et al. (2000) was chosen for a variety of reasons. Firstly, the instrument is usable across a range of ages, from age 10 to adulthood, making it suitable for this study. In the development of this instrument, researchers investigated the epistemic beliefs of children, adolescents and adults by focusing on the subjective and objective dimensions of knowledge. (Kuhn et al., 2000; Kuhn & Weinstock, 2002). The children involved were aged between 10 and 13-years old, which is parallel to the ages of the children involved in this study. Secondly, it is relatively easy to administer and analyse. Thirdly, it allows for discrimination among three levels of epistemological stances and last but not least, this model correlates closely with the levels of historical progression outlined by Lee and Ashby (2004), Lee & Shemilt, 2004 and Maggioni & VanSledright, (2016).

The LEUQ is a scenario-based instrument which requires children to listen to a selection of statements in which two characters, Robin and Chris, each give contrasting opinions on particular topics. Participants must decide in each scenario if one opinion is right or if both opinions could be right. If answering that both opinions could be right, they are then asked if one judgement could be better than the other (Kuhn et al., 2000; Kuhn & Weinstock, 2002).

Table 4. 5: Levels of epistemological understanding

Level	Assertions	Knowledge	Critical Thinking
Realist	Assertions are <i>Copies</i> of an external reality.	Knowledge comes from an external source and is certain.	Critical thinking is unnecessary.
Absolutist	Assertions are <i>Facts</i> that are correct or incorrect in their representation of reality.	Knowledge comes from an external source and is certain but not directly accessible, producing false beliefs.	Critical thinking is a vehicle for comparing assertions to reality and determining their truth or falsehood.
Multiplicist	Assertions are <i>Opinions</i> freely chosen by and accountable only to their owners.	Knowledge is generated by human minds and therefore uncertain.	Critical thinking is irrelevant.
Evaluativist	Assertions are <i>Judgments</i> that can be evaluated and compared according to criteria of argument and evidence.	Knowledge is generated by human minds and is uncertain but susceptible to evaluation.	Critical thinking is valued as a vehicle that promotes sound assertions and enhances understanding.

(Kuhn & Weinstock, 2002)

While Kuhn and Weinstock (2002) acknowledge that the instrument fails to capture the subtle nuances of epistemological thinking, this instrument captures the

essential features of the progression from Realist to Absolutist, Absolutist to Multiplist and from Multiplist to Evaluativist. Table 4.5 provides an overview of the key stages and their characteristics.

4.5.2 Semi-structured interviews. Interviews are frequently used to collect data as they assist the researcher in gaining a comprehensive understanding of the opinions and experiences of the participants. Research interviews support the researcher in the gathering of insights, in gaining familiarity with the context of the study and in the generation of rich descriptive data and are usually categorised as being either structured, semi-structured or unstructured (Kvale, 2007). For the purpose of this research, it was decided to use a semi-structured interview which may be described as an interview that involves administering pre-set questions and topic areas. In direct contrast to the structured interview, the semi-structured interview is flexible in design in that it allows for freedom to engage in a deeper probe if a particular issue arises (Kvale, 2007). This type of interview was chosen because of the complex nature of both epistemology and historical thinking and the wish to explore the children's own understanding of history. Additionally, the flexibility of semi-structured interviews allows for deeper insights that otherwise may be ignored or undetected if a set format of structured questions is adhered to.

For the most part, research into children's historical thinking uses semi-structured interviews involving a series of open-ended questions relating to either specific historical topics or the nature of history itself to probe children's perceptions of history (Barton, 1997b). By beginning with a structured set of questions, semi-structured interviews allow for the comparison of student answers but also allow the researcher to probe the children's answers in order to gain insight into the historical thinking behind their initial responses. The questions contained in the interview schedule were designed after the research of Barton (1997b) who enquired about primary-level students' understanding of history and historical knowledge and Nokes (2014) who investigated second-level students' epistemic stance in regard to reading historical sources.

4.5.3 Pre- and post-intervention historical enquiries. To gauge how the children used historical evidence and to identify the epistemic bottlenecks encountered, a historical enquiry on the death of King Rufus was used with small groups of children before each cycle. This enquiry was employed because it is an ill-structured problem, which, despite the passing of almost one thousand years, has a variety of historical interpretations. According to Jonassen (1997), ill-structured

problem-solving requires students to acknowledge multiple perspectives and employ specific criteria to evaluate the problem. Because such problems often have a variety of solutions, students must develop the justification for their interpretation based on the evidence to hand. The capacity to engage with such practices is dependent, to a large degree, on the student's own underlying epistemic assumptions about knowledge and how it is constructed (Voss & Post, 1988). The activity was framed around the enquiry question: *The Death of King Rufus: An Accident or Assassination?* and students were presented with a range of evidence which included contemporary primary sources, a selection of historians' interpretations and an image of the incident (sketched in 1885, almost 900 years after the event). They were also provided with an enquiry frame to assist them in sorting their evidence.

To assess the effectiveness of the interventions, another historical enquiry was developed. This enquiry was based on Oliver Cromwell's exploits at Drogheda, Ireland in 1649 and was used with the same groups after the interventions. This enquiry was framed around the enquiry question: *Did Oliver Cromwell order the massacre of civilians at Drogheda?* and children were given a variety of historical sources which included a selection of historians' interpretations of the event and an enquiry frame to answer this contested historical question. Neither of these topics feature on the History Quest syllabus and so some historical background to both enquiries was given to the children prior to engagement.

4.5.4 Teaching interventions (HLT1, HLT2 & HLT3). The first cycle, the primary function of which was to test the suitability of the research instruments and the HLTs, was conducted with a group of five 3rd class children from St. Barnabas' Primary School. This preliminary teaching experiment (hereafter referred to as Cycle 1), acted as a pilot study (van Eerde, 2013). The term "pilot study" can have two different meanings in educational research. It can refer to the pre-testing of a research instrument, or, as in this case, it can denote a small scale version of a full study, often referred to as a feasibility study. (van Teijlingen & Hundley, 2001). In under-researched topics such as this, researchers often need to conduct pilot studies to establish starting points of understandings and the consequences of students' prior instructional experiences in order to construct conjectured pathways (Cobb et al., 2003).

The original HLT1 was comprised of four smaller HLTs (see Table 4.6). These HLTs explored the nature of historical evidence, historical significance, using images and texts as evidence and historical argumentation. The initial HLT1 served

as a guide to investigating and explaining student thinking about the nature of history and historical evidence. These findings were used to adjust and refine the HLT which led to the creation of HLT2. HLT2 was then used with the whole class involved in Cycle 2 of the study. HLT2 was also subjected to the same analysis and subsequent modifications led to the development of HLT3 which was used with a new class during Cycle 3.

Table 4. 6: Summary of HLT1

Topic	Learning goals	Activity	Time
The nature of history	Exploring multiple accounts	The Fight	(30 mins)
	Introduction to sourcing and perspectives	The Fighting Vikings	(30 mins)
Historical significance	Exploring historical perspectives	Autobiography	(60 mins + homework)
	Exploring historical significance	The World's Greatest	(30 mins)
Images as Evidence	Using a sourcing heuristic to analyse images and documents	The Sourcerer's Apprentice	(40 mins)
		The Woman on the Bus	(20 mins)
Sustain your Claim	Exploring the elements of an argument.	What is an argument?	(10 mins)
		The Argument Clinic	(20 mins)
		The Greatest Class of All	(30 mins)
		How do we know the World is Round?	(30 mins)
		Why did Titanic Sink?	(40 mins)

(lessons in Appendix J)

4.6 Data collection

4.6.1 The Levels of Epistemic Understanding Instrument. I administered the LEUQ to each child individually. I called the statements out in random order and circled the student responses as they answered. If they answered “no” to the question “could both of them be right?” I circled that response as Absolutist and moved to the next statement. If they answered “yes” to the statement, I then proceeded to ask “could one be more right than the other?” If they answered “no”, I recorded that response as Multiplist and if they answered “yes” it was recorded as Evaluativist. If the child provided a justification for their reasoning, this was also recorded on the sheet as the example below shows:

CníC: Chris thinks lying is allowed in certain circumstances. Robin thinks lying is always wrong. Are both of them right?

Daire: No, lying is always, always wrong. It's wrong to tell lies.

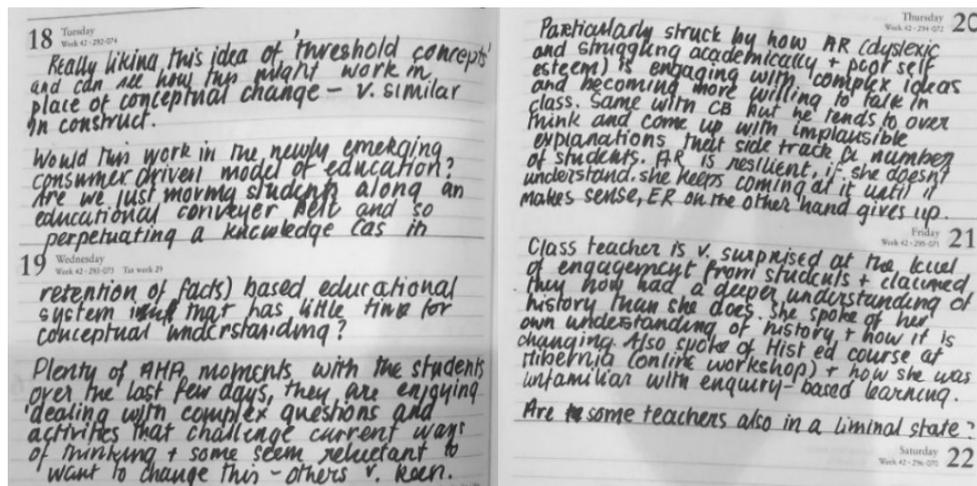
The LEUQ was conducted before and after the teaching interventions. The marked sheets were kept in a designated folder labelled “LEUQ Cycle 1, Pre-Intervention” and placed in a secure filing cabinet.

4.6.2 Semi-structured interviews. The interviews were conducted with the children individually in the corridor outside the classroom using a Maytex Dictaphone. For Cycle 3 (when I was no longer a member of the teaching staff), the school Health and Safety Policy was followed and a Special Needs Assistant was present throughout. Each interview took approximately 20/30 minutes, during which time, the purpose of the recording was explained to each child and their consent was asked for. Each interview was then transferred to a folder on my encrypted personal computer and secured with an additional password. This protocol was observed with all recorded data.

4.6.3 Historical enquiries. The children were brought to the school library in small groups to engage with the historical enquiries. For Cycle 3, in line with the school Health and Safety Policy, a classroom SNA accompanied the children. They were recorded using a Maytex Dictaphone and I observed them working with the evidence. As the children were engaging with the sources without any input from myself, this allowed me to take field notes whilst they worked. These notes included: how the sources were organised, who read the sources and the gestures the students made as they were working. These were added to the transcriptions gathered by the Dictaphone. The procedure for transcribing the audio files is discussed in the Data Analysis section of this chapter.

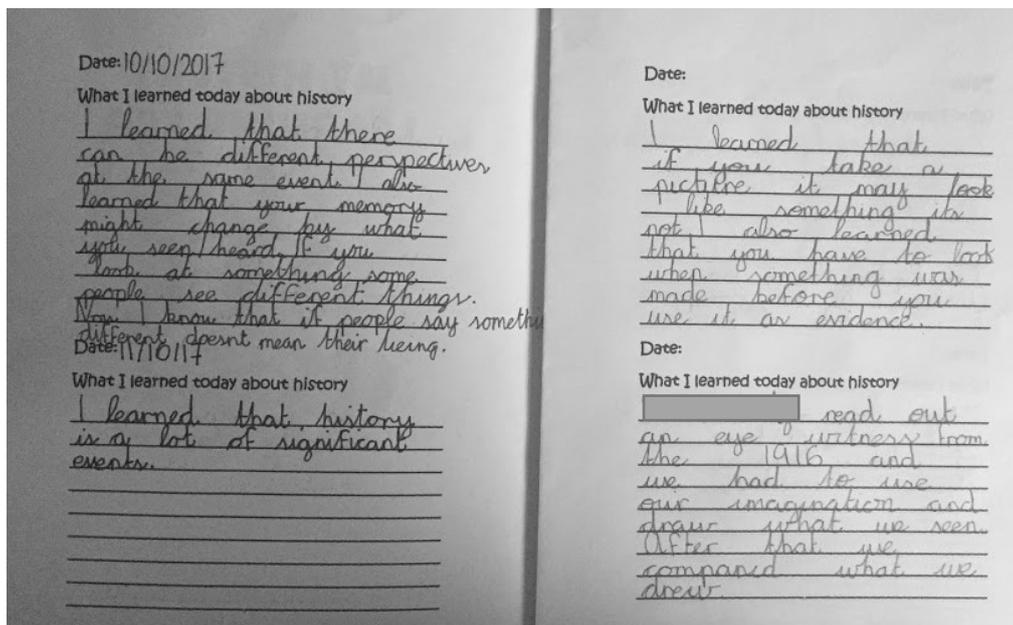
4.6.4 The teaching interventions (HLT1, HLT2 & HLT3). The teaching interventions were recorded in Cycle 1 using the Maytex Dictaphone. As a teacher/researcher during this phase of the study, my field notes were conducted retrospectively at the end of each day in a reflective diary (see Photograph 4.1) and were comprised of any events, thoughts, successes and failures encountered as well as ideas for possible modifications. Due to the limitations imposed by being a dual teacher/researcher, I decided to include learning logs for the students engaged in subsequent cycles.

Photograph 4. 1: Example of a reflective diary



As Cycle 2 and Cycle 3 were conducted with the whole class, I needed to use at least four pieces of equipment to record audio files of the children working in groups. To enable this, another Dictaphone was used and audio was also recorded on my two laptops (which are encrypted). These files were saved to a secure folder on these laptops and were transferred, alongside the Dictaphone files, to my personal computer. Other data collected included the children's learning logs (see Photograph 4.2) which were filled out daily and samples of the children's work created during the teaching interventions.

Photograph 4. 2: Example of a student history log



4.6.5 Transcription of audio recordings. I transcribed the audio recordings myself and though a long and laborious task, this allowed me to begin identifying themes, make connections and familiarise myself with the data (Riessman, 1993). I realised early on that the very act of transcribing data is complex and comes replete with a number of theoretical and methodological decisions that are shaped by explicit and implicit assumptions based on what the researcher considers as important in answering the research questions. As Mishler (1991) argues, this process is an activity that should “reflexively document and affirm theoretical positions” (p. 271) and Oliver, Serovich and Mason (2005) highlight the importance of selecting a transcription style that is consistent with the research objectives of the study.

There are two prevailing modes of practice for transcription of interviews and focus groups. The first of these is naturalism, in which every utterance is recorded in as much detail as possible. The other is denaturalism, in which elements of speech such as stutters, pause and nonverbal cues are taken out. These modes may be viewed as endpoints of a continuum of endless permutations that can be selected from which to achieve the research objectives. A predominantly denaturalised form of transcription was selected for this study for a number of reasons. Denaturalized transcriptions, while attempting a faithful and verbatim representation of the dialogue, pay particular attention to the substance, meanings and perceptions of participants rather than on pauses and involuntary vocalisations (Oliver, Serovich & Mason, 2005). As the purpose of this research was to get at *emic* or insider points-of-view that children attach to the discipline of history, I selected this form of transcription as the focus is less on how perceptions are communicated and more on the perceptions themselves. There was also a pragmatic reason for selecting this mode of transcription, the large volume of audio data collected made a detailed naturalised transcription of the data unfeasible.

Some of the decisions made concerning the process of transcription are outlined below. Vocalizations and nonverbal interactions that occurred during taped sessions were included in the transcription as in some cases, these gave a richer insight into how the children engaged with the activities. Intentional response tokens such as “hmm”, “ok”, “ah”, “um” were also included as they provide both meaning and insight into the nature of the conversation and often add emotion to what the participant is saying. Non-verbal communications which include actions, activities and gesticulations can be useful in developing a deep understanding of the content and context of a conversation (Oliver, Serovich & Mason, 2005) and these were

included in the transcripts of the historical enquiries as I was an observer and able to take field notes during these sessions. They were not included for the intervention recordings because these were audio-recorded as I was delivering these sessions.

All languages contain slang, idioms and euphemisms that are particular to a specific place and inner-city Dublin is no exception. Furthermore, the vocabulary, sentence structure and pronunciation standards spoken in the Dublin area are heavily influenced by the Irish language and this is referred to as Hiberno-English or Irish-English (Kirk, 2011). For example, the Irish form of the verb “to be” has two tenses – one is the present tense proper (or the *Aimsir Láithreach*) and the other is the habitual present (or *Aimsir Gnáthláithreach*) for actions that are repeated in a habitual manner. This results in a unique construction of the verb “to be” resulting in the use of phrases such as “he does be doing that all the time”. Also, in the Irish language, the use of “after” often indicates how recent an action has been completed hence its inclusion in sentences such as “I’m only after telling you that.” All the transcriptions were transcribed in keeping with the actual sentence structures used by the children involved in the study.

4.7 Data analysis

4.7.1 Levels of Epistemic Understanding Instrument. The LEUQ data were coded according to the epistemic levels used by Kuhn et al. (2000) and participants were categorised as being at the Absolutist, Multiplist or Evaluativist level if responses to two of the three items assessing a particular judgement were indicated (see Table 4.7). In the rare case where all three patterns: Evaluativist (E), Multiplist (M) or Absolutist (A) appeared for a particular judgement, the intermediate Multiplist level was given (Kuhn et al., 2000). The LEUQ is a scenario-based instrument which requires participants to choose from a selection of statements in which two characters, Robin and Chris, each give contrasting opinions on particular topics. Participants must decide in each scenario if one opinion is correct or if both opinions could be correct. If the participant agrees that only one answer can be correct, they are marked as absolutist. If answering that both opinions could be correct they are then asked if one judgement could be better than the other (Kuhn & Weinstock, 2002). Students who consider that both opinions are equally valid are marked as Multiplists and students that consider one may be more valid than the other are marked as Evaluativists. The instrument asks questions that consider a range of judgements. These include judgments relating to an individual’s personal taste (taste), beauty (aesthetic judgments), goodness (value judgments), and truth.

The truth section has two categories: truth judgments about the social world and truth judgments about the physical world.

Table 4. 7: Epistemological levels across judgment domains (Cycle 1)

Student		Judgment domains					
		Taste	Aesthetic	Value	Social Truth	Physical Truth	Pattern
Sofia	Pre	MAM	AAM	AAA	AAA	AAA	MAAAA
	Post	MMM	AMM	MAA	AMA	MAA	MMAAA
Rachel	Pre	MMA	MMM	AAA	AAA	AAA	MMAAA
	Post	MMM	MEM	AAM	MAM	AMA	MMAMA
Danny	Pre	MAM	MAE	MAA	AA	AAA	MMMAA
	Post	EAM	MMM	MAM	EAM	MAA	MMMMA
Calvin	Pre	AAM	MMM	AAA	AMA	AAA	AMAAA
	Post	AEM	MEM	MAA	AMA	AAM	MMAAA
Sammy	Pre	AAM	AAM	AAM	AMA	AAA	AAAAA
	Post	MAA	AMM	MMM	AMA	MAA	AMMAA

4.7.2 Semi-structured interviews (thematic analysis). Because of its inherent flexibility, thematic analysis is often used as an analytical tool to explore data. Braun and Clarke (2006) define thematic analysis as a method for identifying, analysing, and reporting patterns and themes within data. Thematic analysis allows for the creation of categories of meaning and the relationships between those categories through a systematic process of inductive reasoning (Braun & Clarke, 2006). It is also a method of analysis that operates across a wide range of theoretical and epistemological approaches and it is this theoretical freedom that defines its usefulness as a research tool for this particular study. Adopting Braun and Clarke’s six-step approach to thematic analysis allows for the creation of categories of meaning and the relationships between those categories through a systematic process of inductive reasoning. This involves organising the data into units (Lincoln & Guba, 1985) and assigning them to categories. There are usually two types of categories that emerge from this type of approach: those that are generated from the participant’s own experiences which aim to capture their world view and those created by the researcher as a result of the theoretical insights generated in response to the research questions or focus of the study (Lincoln & Guba, 1985).

The categories were subjected to an iterative process of revision and refinement as the units were compared and categorised. This constant comparison helps the researcher identify how concepts and categories are connected to each other

and to build an explanatory model that will answer the research questions. The data analysis software package NVivo was used to manage the interview data. The steps taken to analyse the interview data using NVivo are described in Table 4.8 below and this is followed by an explanation of each step in the thematic analysis approach.

Table 4. 8: Thematic analysis using NVIVO

Thematic Analysis (Braun & Clarke)	Application in NVivo	Strategic Objectives	Iterative Process Throughout
1. Familiarisation with the data:	Phase 1 - Transcribing data, read and re-read the data, documenting emerging ideas. Imported data into NVivo Created cases for each participant (demographics etc.) Imported images of student logs	Data Management (<i>Inductive coding through NVivo</i>)	Assigning data to refined concepts to portray meaning
2. Generating initial codes:	Phase 2 – Inductive Coding - Coded the data systematically Collected data relevant to each code	↓	↓
3. Searching for themes:	Phase 3 – Categorisation of Codes - Sorted codes into potential themes	Descriptive Accounts (<i>Reordering, 'coding on' and annotating using NVivo</i>)	Refining and distilling more abstract concepts
4. Reviewing themes:	Phase 4 – Coding on - Checked if the themes work in relation to the coded extracts (pre-intervention interviews) and the entire data set (pre and post intervention interviews)	↓	↓
5. Defining and naming themes:	Phase 5 – Data Reduction – Refined themes, and developed clear definitions and titles for each theme	Explanatory Accounts (<i>drafting summary statements & analytical memos using NVivo</i>)	Assigning data to themes/concepts to portray meaning
6. Producing the report:	Phase 6– Selection of extract examples, final analysis of selected extracts, related analysis to research questions and literature to produce a report of the analysis		↓
			Assigning meaning Generating themes and concepts

1) ***Familiarisation with the data:*** the researcher immerses themselves in the data by reading and re-reading the data and noting initial analytic observations.

My dual role as facilitator, transcriber and researcher ensured a high level of

familiarity with the data. Following each interview, I listened to the audio footage and made initial notes or memos and began to think about possible themes. Of particular note at this early stage was how similar the children's responses were to other studies conducted internationally (e.g., Barton, 1997a; Waldron, 2003; Nokes, 2014; Lee & Ashby, 2003) thus implying a commonality to children's thinking about the historic past.

Emerging questions:

- Are epistemic bottlenecks a matter of semantics rather than epistemology?
- What are the principle bottlenecks? History as constructed rather than the past? Multiple perspectives? Are these connected in any way?
- Do we need to be more explicit about defining history and its purpose in the classroom? Would children have a different epistemic approach to the subject if this was articulated?
- What specific elements of the interventions proved particularly effective in shifting students' ideas about the nature of history?
- Textbook influence: some students are very fixed on the idea that history is about things that are real and not real. Raises questions over how much influence the textbooks have on children's epistemic beliefs about history

2) ***Coding:*** labels are created for important elements of the data that are relevant to the research questions that guide the analysis (see Table 4.9). This is an analytic process that aims to capture semantic and conceptual understanding of the data. In this study, participant-driven open coding of the transcripts was used. Each code was labelled and given clear rules for inclusion (Braun & Clarke, 2006). Conscious that the process of coding is a matter of interpretation, I endeavoured to be consistent and methodical in my approach. Each transcript was read four times before coding.

3) ***Searching for themes:*** a theme may be defined as a coherent and meaningful pattern in the data that relates to answering the research questions. These were constructed with reference to the codes generated. Categories of codes were organised into potential themes using NVivo (see Table 4.10).

Table 4. 9: Stage 2 codes which emerged from the interviews using NVivo

Stage 2: Codes which emerged from the interviews using NVivo	
Code	Description
Ability in history	Child's estimation of how 'good' they are at history
Negative view of history	References to not liking history
Neutral view of history	Not bothered about history as a subject
Positive view of history	Enthusiastic about history
People from past	Children's ideas about people from the past
Real or not real	References to real/not real, true/fake
Characteristics of good historians	What traits make someone 'good' at history
Defining history	Explaining their own view of history
Doing history	References to doing history in class
Epistemic beliefs	Ideas about knowledge
Continuity and change	References to how things have changed/stayed the same
Multiple viewpoints	Recognition that there are other ways to view things
Origin of historical knowledge	Where historical knowledge comes from/how it's created
Historical references	Historical topic mentioned
Linking past/present/ future	Creating links between past, present and/or future
Personal connection	Instances where history has impacted themselves
Probing further	Researcher clarifying or pressing further
Acquiring historical knowledge	Origin of historical knowledge – where it comes from
Importance of genealogy	Family history as a purpose for studying history
Describing a historian	The characteristics of a historian
Describing what a historian does	The role of a historian
Evidence as source	Drawing historical knowledge from evidence
Family as source	Drawing historical knowledge from family
History books as source	Drawing historical knowledge from books
Media as source	Drawing historical knowledge from media
Public history as source	Drawing historical knowledge from museums etc.
Textbooks as source	Drawing historical knowledge from school text
Using evidence	Examples where children engaged with evidence

4) **Reviewing themes:** *themes are reviewed to check that they actively depict the coded extracts in the full data-set.* At this point, I reflected on the story told about the data and the relationship between the themes developed. This resulted in the collapsing or splitting of some themes and the discarding of others. For example, the theme Purpose of History, though interesting, did not relate to the research questions and was removed and the sub-code Acquiring Historical Information was moved into the Epistemic Beliefs theme.

Table 4. 10: Stage 3 codes which emerged from the interviews using NVivo

Stage 3: Categories and codes	References In Transcripts
Attitude towards history	
• Ability in history	15
• Negative view of history	6
• Neutral view of history	2
• Positive view of history	28
Binaries	
• People from past	35
• Real or not real	22
Characteristics of good historians	26
Defining history	34
Doing history	78
Epistemic beliefs	
• Continuity and change	24
• Multiple viewpoints	45
• Origin of historical knowledge	65
Historical references	63
Linking past present or future	20
Personal connection	27
Probing further	14
Purpose of history	57
• Acquiring knowledge	0
• Importance of genealogy	0
Role of historian	40
• Describing a historian	12
• Describing what a historian does	36
Sources of history	94
• Evidence	5
• Family	5
• History books	12
• Media	10
• Public	10
• Textbooks	20
Using evidence	17

5) *Data reduction: this phase involves the reduction of the themes through code consolidation.* Defining and naming themes requires a detailed analysis of each theme to get to its very essence and connects the themes into the overall picture of the data (as seen in Table 4.11). This consolidation also provides for a more philosophical and literature-based framework which can be used for reporting the analysis. The following example briefly explains the coding process employed to illustrate how the initial codes were collapsed into conceptual categories using the pre-intervention interview transcripts from Cycle 1:

Sammy: “Well, if they both saw the same event they would have the same version. It wouldn't be possible for both of them to have different versions unless someone is lying for sure. There must be one liar.”

Initial Code: Multiple Viewpoints (defined as recognition/or not recognising that there are other ways to view things).

Intermediate Code: Epistemic Beliefs (defined as ideas about knowledge).

Final Code: Beliefs about History

Table 4. 11: Stage 5 reduction of data

Stage 5: Data reduction		
Historical Dispositions	Negative view of history Neutral view of history Positive view of history	Personal connection Ability in history Using history
Beliefs about history	Continuity and change Multiple viewpoints Origin of historical knowledge Characteristics of good historians Defining history People from past	Real or not real Describing a historian Describing what a historian does Acquiring historical knowledge Importance of genealogy Probing further
Historical knowledge	Doing history Historical references Linking past present or future Evidence Family	History books Media Public Textbooks

Through memo writing and a process of reflecting on participant’s responses, initial codes were then categorised into more focused theoretical codes. For example, the code above was re-categorised under the theme: Epistemic Beliefs. The constant comparison of the initial codes, and the writing of detailed memos based on these comparisons resulted in the formation of conceptual categories and this excerpt was eventually captured under the conceptual theme: Beliefs about History.

6) **Writing up:** *the write-up requires the researcher to join both the analytic narrative and the data extracts and to contextualise them in consideration of existing literature.* The coded material was transformed into writing by extracting examples relating to the themes, research question, and literature. This analysis was supported with empirical evidence to address the research questions.

4.7.3 Pre- and post-intervention historical enquiries. A hybrid approach to thematic analysis, modelled after the inductive-deductive method described by Fereday and Muir-Cochrane (2006) was selected for the analysis of the historical enquiries. The hybrid approach to thematic analysis combines both a data-driven

inductive approach (Boyatzis, 1998) and a deductive *a priori* approach (Crabtree & Miller, 1999). There are six stages to Fereday and Muir-Cochrane's approach. The first two stages occur sequentially but stages three to six occur concurrently through an iterative and reflexive process. This requires movement back and forth between stages during analysis. The methods of analysis employed are detailed below.

The audio recordings of the activities in which the focus groups engaged were transcribed and analysed and the data analysis software package NVivo. NVivo was used to manage the large amounts of data created during the study and allowed a clear, traceable and transparent process of data-handling. The historical enquiries were imported into the NVivo data management program and the coding of the data and identification of relevant themes commenced.

The coding process comprised of identifying important moments and encoding these prior to interpretation (Boyatzis, 1998). A "good code" can be defined as one that encapsulates the qualitative richness of the issues under examination (Boyatzis, 1998, p. 1) and allows for the development of a series of themes. Boyatzis defines a theme as "a pattern in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon" (p. 161). This inductive approach was supplemented with a template or *a priori* approach as described by Crabtree and Miller (1999). This required the generation of a codebook as a means of arranging the data for further interpretation before an in-depth analysis and is based on the research questions and the theoretical/conceptual framework. This process is outlined step-by-step in the sections below:

- 1) ***Developing the code manual:*** The development of a code manual was an integral part of the data analysis process because it allowed for the management and organisation of the data which enabled further interpretation (Crabtree & Miller, 1999). The application of the template also provided transparency and added to the credibility of the analysis (Boyatis, 1998). The codebook was developed *a priori* and was driven by the research questions, the Working as a Historian strand from the IPHC (1999a) and van Drie and van Boxtel's Theoretical Framework for Historical Reasoning (see Table 4.12). The framework is particularly suitable for analysing student reasoning in collaborative learning environments and is designed to identify progression in historical thinking and learning. Though developed for use with second-level students, the framework aligns particularly well with the skills and

concepts section of the IPHC (NCCA, 1999a). It provided a base from which to investigate the variances in historical reasoning and allowed me to ascertain whether the strategies and attitudes observed were as a result of historical or epistemological knowledge. Six broad code categories from the framework formed the code manual and these are discussed in the section below. The category Epistemic Beliefs was added to align the framework with the objectives of this particular study.

Asking historical questions: To analyse the results of the task, historical questions were categorised as either factual or interpretative. Factual questions are considered surface-level questions requiring surface-level answers such as “Who was King Rufus’ brother?” which can be answered with factual information usually found by skimming or scanning the text. Interpretative questions are considered to be those which cause the reader to dig deeper to find the answer. These type of questions are those which ask the “how” and “why” of an event. van Boxtel & van Drie (2004) describe these as evaluative historical questions which require the students to explain or justify their reasoning with an acknowledgement of the questions asked. Interpretative questions, in this study, were regarded as more indicative of higher-level historical reasoning than factual questions.

Contextualization: van Drie & van Boxtel, (2004) describe contextualisation as a means to explain the actions of people from the past and propose using De Keyser and Vandepitte’s different frames of reference to analyse the use of context in student discourse (1998). These are: *a chronological frame of reference* which deals with the knowledge of time periods and significant events, *a spatial frame of reference* which considers geographic concepts and locations and *a social frame of reference* which deals with socio-economic, political and cultural settings (van Drie & van Boxtel, 2004). These were used to try to identify the types of knowledge the children were drawing on when engaged in the enquiries.

Argumentation: Argumentation as a historical activity entails using sources as evidence to support or dismiss a historical claim. Means and Voss (1996) offer three criteria for identifying the use of argument in discourse: the argument is plausible and can be seen as true or valid in respect of the evidence offered; it is comprehensible, in that multiple supports are provided to warrant a conclusion and it accounts for counter-arguments or conflicting

information. In this study, the children's historical claims were evaluated against the evidence offered (or not) to support their arguments.

Using substantive concepts: A knowledge of substantive concepts, that is, the understanding of concepts and terms such as “monarchy”, “slavery” and “Civil War” are essential in helping to organize and understand historical events. In this study, substantive concepts which were used to build a historical context or to construct coherent explanations were identified.

Using meta-concepts: In this study, use of meta-concepts in student dialogue was analysed according to and the “Working as a Historian” section of the IPHC (NCCA, 1999a) which outlines the meta-concepts to be used by primary school children in Ireland. Those meta-concepts include: continuity and change, cause and effect, empathy, time and chronology and synthesis and communication, added to this was the meta-concept of significance as outlined in Seixas’ “Benchmarks of Historical Thinking” (2006).

Using Evidence: For this facet of historical reasoning, the nature of student engagement with historical sources was examined and I looked for examples of the use of sources as a reference, as evidence to support a claim, acknowledgement of identifying features such as date or author. Use of questioning evidence and corroboration was also examined.

Epistemic Beliefs: Beliefs relating to epistemology were categorised as bottlenecks when they impeded on historical understanding and breakthroughs when they allowed for critical engagement or showed a shift in understanding.

Table 4. 12: Codebook for historical enquiries

Historical questions	1. Interpretative questions	Asks deeper “how” and “why” questions
	2. Factual questions	Asks surface level questions requiring surface level answers
Contextual	3. Social	Uses knowledge of socio-economic, political & cultural settings
	4. Spatial	Uses knowledge of geographical and spatial concepts
	5. Chronological	Uses knowledge of time periods and significant events
Argumentation	6. Supporting claims	Makes an argumentative claim and provides plausible reasons for it
	7. Multiple claims	Considers various claims when proposing an argument
	8. Counterclaims	Student makes a claim that introduces contradictory information or opposes an already existing claim.
Substantive Concepts	9. Use of historical concepts	Uses knowledge/understanding of substantive concepts such as monarchy, republic etc.
Meta-concepts	10. Historical Significance	Identifies a significant historical event Uses criteria to decide on the significance of the event
	11. Continuity and Change	Takes note of major and subtle changes that have occurred over time
	12. Cause and Effect	Notes varying contributing influences in shaping historical events.
	13. Empathy	Appreciates how people understood their own time and how they saw themselves within it.
	14. Time and chronology	Places people and events within a broad historical sequence Uses words and conventions associated with dates and time
Using Evidence	15. Analysing or exploring evidence	Appreciate that evidence can be interpreted in a number of ways
	16. Using a source to support or refute an idea	Makes simple deductions from evidence
	17. Comparing sources	Compares accounts of a person or event from two or more sources to make sense of conflicting information
	18. Evaluating a source as evidence	Asks questions about a piece of evidence rather than the content (who wrote this, why they might write it, who is their audience, etc.)
Epistemic Beliefs	19. Bottlenecks	Beliefs that hinder historical understanding
	20. Breakthroughs	Beliefs that allow for deeper understanding

For this study, codes were developed as described by Boyatzis (1998) and identified by the code label or name, the definition of what the theme concerned, and a description of how to know when the theme occurred. A codebook developed for a hybrid approach to thematic analysis is designed to be open to further extension (Fereday & Muir-Cochrane, 2006), and this codebook eventually held 35 sub-category codes contained within the seven main categories as detailed in Table 4.13.

Table 4. 13: Extension of the codebook for historical enquiries

Name	References in transcripts
Argumentation	
Counterclaims	25
Multiple Claims	10
Supporting Claims	76
Using only the image to support claims	39
Unsupported claims	56
Epistemic Beliefs about history	
Borrower	28
Bottlenecks	43
Breakthroughs	45
Copier	24
Criterialist	10
Presentism	18
Historical Questions	
Clarifying questions	24
Based on evidence	
Based on procedures	
Factual questions	16
Interpretative Questions	47
Meta Concepts	
Cause and Effect	18
Continuity and Change	11
Empathy	9
Historical Significance	4
Naive use of meta concepts	4
Time and chronology	14
Substantive Concepts	
Historical Concepts	20
Use of historical language	13
Using Evidence	
Analysing evidence	97
Comparing sources	24
Contextualization	2
Chronological	7
Social	23
Spatial	12
Corroborating	21
Exploring evidence	46
ICEACT	1
Naive uses of evidence	52
Sourcing	63

2) **Testing the reliability of the code:** An important aspect in the creation of a framework for analysis is to test the reliability of the codebook in actually coding the data (Boyatzis, 1998). To ensure a good fit, a section of the King Rufus enquiry was chosen as a test case and was coded twice using the rubric above. A colleague from the History Education Team in Dublin City University was invited to code the document. The results of the coding process were compared and no further modifications to the codebook were required.

- 3) ***Summarizing data and identifying initial themes:*** The process of summarising the data from the enquiries was conducted. This consisted of reading and summarising the raw data using the *a priori* template as a guide. The data were summarised thematically by highlighting the salient remarks made by participants in response to the questions asked during the interviews. Emerging themes were also included as and when these arose.
- 4) ***Applying template of codes and additional coding:*** The template of codes was employed using the template analytic technique (Crabtree & Miller, 1999) to identify meaningful units of analysis using NVivo. The codes from the codebook were entered into the software as nodes and the text was coded by matching segments of the data that corresponded with the description of the suitable nodes. These segments were sorted and organised across all three cycles. For example, the post-intervention results were compared to the pre-intervention results to chart the progression of the children's historical thinking as a result of the teaching interventions. Table 4.14 outlines the coding and cross-comparison of the use of questions during the pre and post enquiries. As can be seen, the coding category Questions was expanded to include: clarifying questions, factual questions and interpretative questions. The clarifying questions category was further expanded to include evidence-based questions and procedure-based questions.
- 5) ***Connecting the codes and identifying themes:*** Although the analysis was guided by the preliminary codes, inductive coding was also employed to segments as new themes were found in the texts (Boyatziz, 1998). The emerging inductive codes were either separate from or expanded versions of the codes found in the codebook. For example, the concepts of Multiple Perspective and Single Perspectives were initially coded as part of the main code Epistemic Beliefs. However, as they were capturing something different from the description, they then became separate, data-driven codes. As Crabtree and Miller (1999) maintain, connecting codes to each other is a process that allows the researcher to discover themes and patterns in the data. Table 4.14 illustrates the process of connecting and naming themes across the data set. At this stage of the analysis, patterns and differences between separate groups of data were emerging, signifying areas of agreement and areas of possible disagreement. A conceptual map was also creating in NVivo

to map the emerging codes connected to the theme of Epistemic Beliefs (see Appendix Q).

6) **Corroborating and legitimating coded themes:** Once the data were methodically evaluated and all appropriate themes (both *a priori* and emergent) organized, these initial themes were compared and collapsed, where appropriate, through a second iterative process. The final stage involved corroborating (or confirming) the findings (Crabtree & Miller, 1999) to mitigate the unintentional or unconscious seeing of patterns that are not actually present (Fereday & Muir-Cochrane, 2006). All stages were examined to ensure that the clustered themes represented the initial data analysis and that the codes were corresponding accurately. This involved several iterations before the analysis moved into an interpretative phase.

Table 4. 14: Comparison of the use of questions in pre- and post-enquiries

Pre-Intervention enquiry: King Rufus		Post-intervention enquiry: Cromwell	
Code	Clarifying questions: references - 41	Clarifying questions: references – 38	
Sub code	Evidence-based questions: 33	Evidence-based questions: 12	
Note	Questions mostly based on the details of the Rufus image (27 out of 29)	Most questions based on provenance of the source or clarifying interpretation.	
Example	‘The trees look good don’t they?’ (C1) ‘But why is the horse looking back?’ (C2)	‘But why? Is it like ‘I left the game, you win?’ (C3) ‘That’s a historian, is it?’ (C2)	
Sub code	Procedure-based questions: 13	Procedure-based questions: 23	
Note	Questions mostly related to taking turns to read clarifying actions taken or to be taken	1) Seven related to taking turns 2) Two related to time conventions 3) 14 related to procedures connected to using the sourcing heuristic ICEACT	
Example	‘So, we read these two didn’t we?’ (C2) ‘Do you want me to read?’ (C2) ‘Can I read source D?’ (C3)	1) ‘Source D, can I read it?’ (C2) 2) ‘You know the eighteens? Is that before the sixteens? Like 1642?’ (C3) 3) ‘Is it ok to ICEACT it after we read it?’ (C3)	
Code	Factual questions: 18	Factual questions:	
Note	Questions mostly ask for a factual answer	Questions mostly ask for a factual answer	
Example	‘Is Queen Elizabeth still alive?’ (C3) ‘Is a stag like that size or something? Is it bigger than a horse?’ (C3)	‘Did Cromwell die at Drogheda?’ (C3) ‘But isn’t it illegal to kill or hurt someone in a church?’ (C3)	
Code	Interpretative questions: 58	Interpretative questions: 87	
Example	1) Some questions related to deciphering the evidence and contextualising it by questioning practices at the time.	1) Unlike pre-enquiries, majority of questions showed deeper critical engagement with sources. Children are	

	<p>2) Many questions prefaced with 'maybe'</p> <p>3) Majority of questions related to trying to understand the human motives behind the event – children finding it difficult to reconcile their own emotions to that of the king's brother Henry</p>	<p>using questions differently, posing questions as they are reading the sources.</p> <p>2) Questions are allowing them to build on other historical thinking skills e.g. contextualising and corroborating. Using questions to interrogate the sources deeply.</p>
Example	<p>1) 'Yeah but that spelt differently is Tyrol up here and Tirrold down here, Well maybe people spelt differently is that it?' (C1)</p> <p>1) 'How did they take pictures back then, Like if they took a picture of it? Recorded it to know if that's real. Did you ever see like the way there was no cameras back then? How were they able to know what it looks like? I mean like know properly what it looks like without taking a picture.' (C3)</p> <p>2) 'Maybe it could be a hunting accident?' (C2)</p> <p>3) 'why would you do something like that to your friend? Why would you be fighting with your friend? Why would you fight with the king who could give you everything?' (C1)</p>	<p>1) 'Ah, but how do we know who writ the source? It could have been his friend, we need to check who writ it. Basically he's saying there, he regrets this, wait, what's he regretting? Like what if the Irish didn't actually do that to the English in the first place, ah no, it's the English doing it to the Irish' (C1)</p> <p>2) 'Remember what we were doing? the artist could be using their imagination, we have to be cautious, like at the GPO thing, did you look at the date?' (C1)</p> <p>1,3) 'Was he there? No he wasn't, he was in France. Wonder what he was doing with Charles in France? I don't get that. And why was he Charles' friend? Miss was Charles king by then?'</p>

4.7.4 Teaching interventions (HLT1, HLT2 & HLT3). The HLT has a variety of purposes throughout the study and functions also as a research instrument (Gravemeijer, 1994; Bakker, 2004). During a DBR Teaching Experiment, the HLT is plotted against the Actual Learning Trajectory (ALT) in order to assess and modify the activities. When the DBR Teaching Experiment concludes, the HLT acts as a guide for the retrospective analysis of the data, and it is the interplay between the HLT and the empirical results which form the basis for theory development.

The HLT was analysed using a data analysis matrix based on a model devised by Dierdorp, Bakker, Eijkelfhof and van Maanen (2011). This was used to capture whether student learning was supported by the instructional activities. The predicted learning from the HLT was compared to the ALT using the conjectures for each task. This process was completed as the lessons were enacted and also at the end of each cycle. As shown in Table 4.15, the data analyses matrix was used to compare the HLT to the ALT. The first three columns show the HLT and the predicted responses from the students. The fourth column gives examples of transcripts from classroom interaction, the fifth uses clarifying comments based on field notes and transcripts and the final column identifies the match between the HLT and ALT through the use of “-”, “±”, or “+” symbols.

Table 4. 15: Data analysis matrix (based on Dierdorff et al., 2011)

HLT 1					
HLT			ALT		
No.	Task	Conjecture	Transcript	Clarification	Result
Nature of History					
1a The Fight	Students imagine they are principal trying to work out who started a fight. Different accounts but no-one is lying	Students recognise there are multiple viewpoints of an event	J: <i>Emm</i> , it's like this, I can't just say I was robbed coming to school if I wasn't. If I said that I'd be telling lies S: Yeah, and as well, you'd get into trouble for lying about it G: Yes but what if I saw you messing with your friend coming to school and I THOUGHT you were being robbed?... But I'd have a different version of it, a different story of the same thing, do you see?	Four agree with Jack and two don't	-
1b The Fight	Students discuss those who saw the fight, why there may be different views and how the principal will make a decision	Students identify how multiple accounts are formed	G: People seen it from a different angle so they could <i>seen</i> it from the back. Could have saw it from a far distance away or up in a window? Could have been two teachers on yard, one could see one thing, maybe one teacher forgot their glasses? K: Maybe they could have seen it later than each other, at different times R: Yeah, maybe they came in at different points J: Maybe they didn't see the fight properly, like other people blocking their view? K: It could be that they have the same story but it's in their own words or it could be that they are friends with the person and don't want to get them into trouble	The Fight scenario worked really well to introduce the idea of multiple perspectives and the concrete example of something they've all experienced allowed students to engage in heated dialogue and generated a lot of discussion.	+

The – sign was used when the observations proposed that the conjectures were confirmed for one of the students. The + sign was used when these were confirmed for four or more of the students, and for the intermediate cases, the ± sign was used. Matrix cells were left empty if observations did not provide enough information. This form of analysis provided an overview of the enacted trajectory and assisted in identifying problematic sections. As Bakker and van Eerde point out, this also contributes to the robustness of the HLT in subsequent cycles (2015). The interventions themselves were also analysed using Braun and Clarke’s six-step approach (2006) to thematic analysis. This process was explained in full detail earlier in the chapter and so only the final codebook is shown in Table 4.16.

Table 4. 16: Final codebook for teaching interventions

Name	Description
Argumentation	
Definitions Of Arguments	Children define an argument
Behaviours	Non-historical behaviours exhibited by students
Connecting To Previous Activities	References to activities already done from the trajectory
Disagreements	Children arguing (non-historical context)
Following Instructions	Children following the instructions given by researcher
Literacy Difficulties	Struggles with comprehension or text
Negotiating	Children create rules themselves
Organising Roles	Examples of how children organised themselves
Conceptual Change	Evidence of CCM in use
1 Articulation	Students name initial ideas about concept
2 Analogical Confrontation	Students are challenged through use of analogy

Name	Description
3 Engagement	Students apply new conceptual understanding to a historical topic
4 Explication	Students can connect the analogy to the study of history
Epistemic Beliefs	
Preconceptions	Ideas children have about historical knowledge and nature of history
Shifting Beliefs	Statements that indicate child is changing their initial conceptions
Historical Significance	
Using Criteria	Children use criteria to back up statements
Historical Understanding	
Not Making Connections	Does not relate activity to understanding history
Personal Connections	
Everyday Experiences	Using commonplace experiences to relate to history
Historical Knowledge	Examples where students draw on prior knowledge of historical events
Sources Of Historical Knowledge	Instances where children refer to where they are drawing historical knowledge from: eg: family, media
Perspective Taking	
Explaining Multiple Perspectives	Uses concrete examples to explain how multiple perspectives are formed
Multiple Perspectives	Participant realises multiple perspectives are possible
One Perspective	Participant doesn't see there are multiple perspectives
Reading Evidence	
Analysing	Analysis of the source
Historical Language	Specific historical terminology (e.g., sourcing, bias, evidence)
Identifying	Identifies the creator of the source
Sourcing	Using a sourcing heuristic or references to dates, context or corroboration
Scaffolding	
Peer Explanation	Students explain concepts to each other
Peer Scaffolding	Children supporting each other's understanding

4.8 Conclusion

Employing a DBR Teaching Experiment, this study used a variety of research methods to document a classroom teaching experiment conducted in three senior Irish primary classes. This was a complex design as teaching experiments are often carried out in the domain of mathematics using previous research and RME as the underlying theoretical framework. Given that there is no corresponding framework in history education and very few studies on children's historical thinking in an Irish primary context (Waldron, 2003, 2005), a number of pre-intervention instruments were deemed necessary to establish baseline information on the participants' current thinking. This involved the use of the LEUQ (Kuhn, Cheney & Weinstock, 2000) to identify approximate epistemic stances, semi-structured interviews to uncover epistemic beliefs and observation of children engaged in historical enquiries to ascertain if these beliefs impacted on student engagement with historical evidence.

Data collection, then, consisted of questionnaires, interviews, audio-taped recordings of the teaching interventions, field notes and individual student logs.

This research draws from a variety of theories and models which were identified in the literature and discussed in the previous chapter. Conceptual change theory, the How People Learn Framework and social constructivism informed the design of the teaching interventions while Kuhn, Cheney and Weinstock's Epistemic Understanding Model (2002), van Drie and van Boxtel's Framework for Historical Reasoning (2008) and a framework for historical epistemology, influenced by the work of Lee, Shemilt and Ashby (2003) and developed by Magionni and Reddy (2014), supported the analysis of data and the interpretation of the findings. The findings that arose from this analysis are discussed in detail in Chapters Five and Six.

CHAPTER FIVE: EPISTEMIC BOTTLENECKS

5.1 Introduction

This chapter opens with the analysis of the pre-intervention LEUQ. This is followed by an account of the children's epistemic bottlenecks about history and historical evidence which are based on the findings of the semi-structured interviews. This analysis is further supplemented by an exploration of the bottlenecks uncovered during the historical enquiries. In doing so, this chapter also answers the first research question: what epistemic bottlenecks inhibit children's historical understanding? The chapter concludes by describing the design considerations for the HLT that was informed by this analysis.

5.2 Levels of Epistemic Understanding Questionnaire.

As was discussed in Chapter Two, Kuhn, Cheney and Weinstock (2000) identified four levels of epistemic understanding: Realist, Absolutist, Multiplist and Evaluativist. A brief overview of these may give greater clarity to the results of the pre-intervention results. Realist beliefs are generally found in very early childhood and were not included in the instrument. Absolutists view knowledge as an objective entity in that it is certain and signifies a reality external to the subject. Assertions are viewed as facts that can be either correct or incorrect; therefore, when two people have different opinions, only one of them can be right. The Multiplist acknowledges that knowledge is the product of the human mind and considers it to be uncertain. Mutliplists view all assertions as opinions and, as everyone is entitled to an opinion; all opinions are equally correct. The Evaluativist integrates both the subjective and objective aspects of knowing and though there is a recognition that knowledge is uncertain, it is tempered by an appreciation that some claims are strengthened by supporting evidence. The Evaluativist accepts that two assertions may be correct but is swayed by the argument that has the most justification. The following section reports on the results of the pre-intervention LEUQ results for all three cycles.

5.2.1 LEUQ Cycle 1. The LEUQ is a scenario-based instrument that requires children to choose from a selection of statements in which two characters, Robin and Chris, each give contrasting opinions on particular topics. Participants must decide in each scenario if one opinion is correct or if both opinions could be correct. Kuhn et al. (2000) propose that the judgements individuals make are of differing types so the questionnaire asks questions that consider a range of judgements. Judgments relating to an individual's personal taste (taste) include questions such as: "Robin says warm

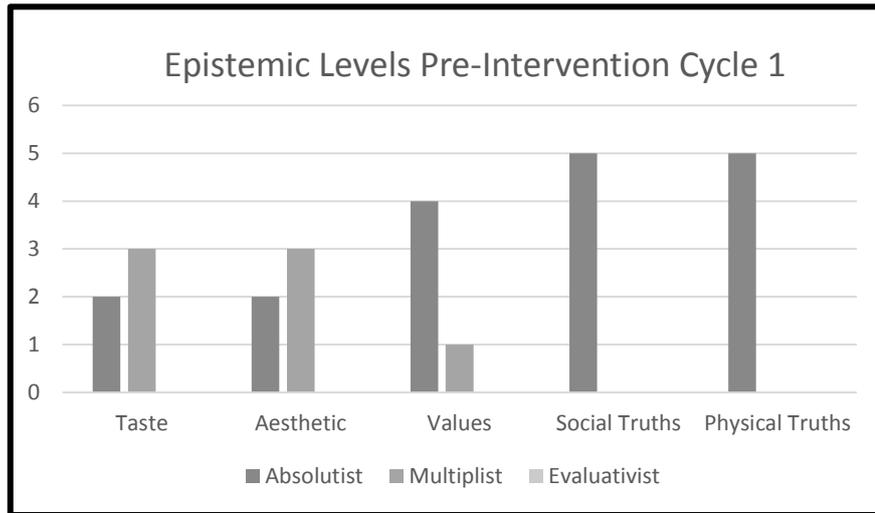
summer days are nicest. Chris says cool autumn days are nicest.” Judgements concerned with opinions on aesthetics include questions such as “Robin thinks the first book they both read is better. Chris thinks the second book they both read is better.” The instrument also includes statements relating to value judgments and truth. The truth section has two categories: truth judgments about the social world and truth judgments about the physical world. Each student was asked three questions relating to each of the judgement domains. Each answer was scored as either Absolutist, Multiplist or Evaluativist. The dominant answer defined the category the student fell into for each domain.

Table 5. 1: Epistemological levels across judgment domains in Cycle 1

Student		Judgment domains					Overall Pattern
		Taste	Aesthetic	Value	Social Truth	Physical Truth	
Sofia	Pre	MAM	AAM	AAA	AAA	AAA	MAAAA
Rachel	Pre	MMA	MMM	AAA	AAA	AAA	MMAAA
Danny	Pre	MAM	MAE	MAA	AAM	AAA	MMMAA
Calvin	Pre	AAM	MMM	AAA	AMA	AAA	AMAAA
Sammy	Pre	AAM	AAM	AAM	AMA	AAA	AAAAA

The results of the questionnaires from Cycle 1 are given in Table 5.1. Four of the children showed Absolutist leanings and one demonstrated a Multiplist stance in their overall pattern. There were no Evaluativist stances. Of the judgement domains, two children displayed an Absolutist stance and three showed a Multiplist stance in the domain of Taste. In Aesthetics, three displayed Multiplist positions and two showed as Absolutist. All five showed Absolutist tendencies in the judgment domains of Values, Social Truth and Physical Truth with only five instances of Multiplism out of the forty-five choices. The bar chart in Figure 5.1 below shows a breakdown of how the children scored in the individual judgement domains.

Figure 5. 1: Bar chart of epistemic levels in Cycle 1



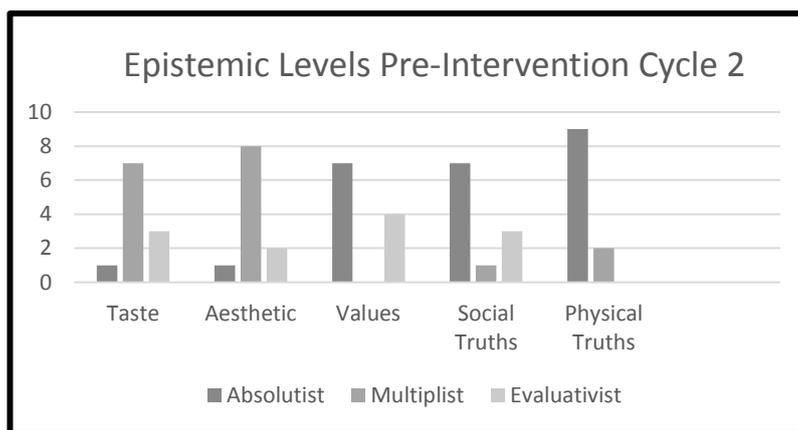
5.2.2 LEUQ Cycle 2. The LEUQ was administered to eleven children from Cycle 2 before the teaching interventions began. Table 5.2 displays the patterns for each child across all five judgement types. Overall, seven of the participants demonstrated a predominantly Absolutist stance, one demonstrated a Multiplist stance and the remaining three showed an Evaluativist stance. Only one pattern emerged as “pure” (Kuhn et al., 2000) in that the participant indicated an Evaluativist stance across all five domains.

Table 5. 2: Epistemological levels across judgment domains Cycle 2

Student	Judgment domains						Pattern
	Pre	Taste	Aesthetic	Value	Social Truth	Physical Truth	
Róise	Pre	MEM	MMM	EEA	MAM	AAA	MMEMA
Daire	Pre	AAA	MMM	AAA	AAA	AAA	AMAAA
Freya	Pre	MAM	MAA	AAA	EAA	AAA	MAAAA
Sean	Pre	AMM	MMM	AAA	AAA	AAA	MMAAA
Ailbhe	Pre	EEE	MMM	EAE	EEA	AAM	EMEEA
Dathaí	Pre	EEE	EEE	AAA	AAA	AAA	EEAAA
Bethany	Pre	EAM	MMM	AAA	AAA	AAA	MMAAA
Gavin	Pre	EEE	EEE	MEE	EEM	EEE	EEEEEE
Seoda	Pre	EAM	EMM	AAA	MAA	AAA	MMAAA
Caoimhe	Pre	MMM	MMM	EEA	EAE	EEE	MMEEE
Ruadh	Pre	MMM	MMM	AAA	AAA	AAA	MMAAA

The remaining patterns did show some interesting regularity across the domains. The results of those patterns indicated that the majority of the participants were functioning at the Multiplist or Evaluativist level concerning judgements of personal taste. Eight indicated a similar stance regarding aesthetic taste but in regard to value judgements, as can be seen in Table 5.2, there appeared to be a shift back to the Absolutist level for seven of the participants.

Figure 5. 2: Bar chart of epistemic levels in Cycle 2



This seems to indicate that Absolutist thinking persists particularly in the values domain despite a transition to higher levels in other domains. The comments made by some of the children when completing the questionnaire show that their choices were based on their own personal opinions. For example, when asked to decide between the statements “Robin thinks lying is wrong” and “Chris thinks lying is permissible in certain situations” the answer most children gave was “lying is always wrong” (Daire, LEUQ Interview transcripts, Cycle 2). There was also a contrast between scores on judgements of personal or aesthetic taste and the scores pertaining to truths of the social and physical world. Nine of the children indicated an Absolutist stance regarding truths of the physical world and seven indicated an Absolutist stance in regard to truths of the social world.

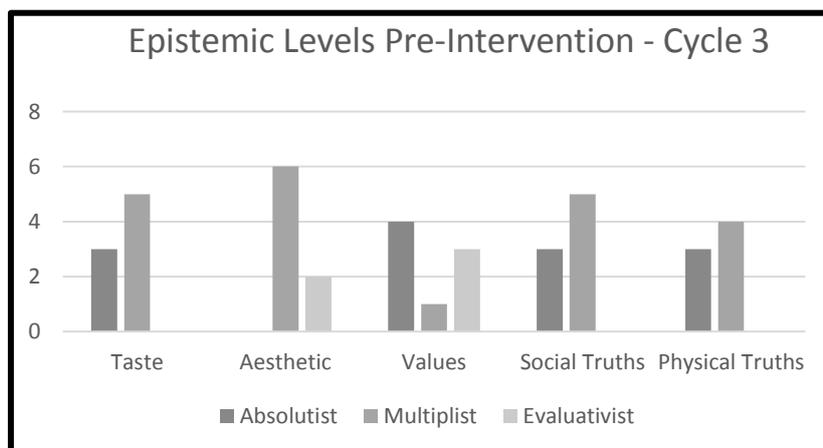
5.2.3 LEUQ Cycle 3. The LEUQ was administered to eight children in Cycle 3 before the teaching interventions. Table 5.3 displays the patterns for each child across all five judgement types. Three of the participants demonstrated an Absolutist stance and five participants showed a Multiplist stance. No student demonstrated an Evaluativist stance though evaluative thinking appeared across the domains.

Table 5. 3: Epistemological levels across judgment domains in Cycle 3

Student	Judgment domains						
	Pre	Taste	Aesthetic	Value	Social Truth	Physical Truth	Pattern
Caoimhe	Pre	MMM	MEA	EAA	AAM	AAA	MEAAA
Ivan	Pre	MAM	MEM	MEA	MAM	AMM	MMMMM
Danka	Pre	MEM	MMM	MEE	MEM	AMM	MMEMM
Katelyn	Pre	AAA	EME	AAA	EAA	AAM	AEAAA
Conor	Pre	AMA	MMM	MAA	AAA	MMM	AMAAM
Enda	Pre	AAA	MMM	MAA	EMA	AAA	EEMMA
Eimear	Pre	MMM	MMM	MEE	MMM	MMM	MMEMM
Rónan	Pre	MMM	MMM	MEE	MMM	MMM	MMEMM

As can be seen in the bar chart (Figure 5.3), the results across the domains showed that three of the participants were functioning at the Absolutist level and five at Multiplist level in regard to judgements of personal taste. Evaluativist thinking appeared in the aesthetic and values domains but was not evident in the areas of social and physical truths where participants reverted to Absolutist thinking. This is a trend that persisted across all three pre-intervention cycles and is consistent with the findings of Kuhn et al. (2000) who found that values and physical truths are the domains in which children who, for the most part, have shown a shift to Multiplism or Evaluativism, are most likely to show a lingering Absolutism

Figure 5. 3: Bar chart of epistemic levels in Cycle 3



Kuhn, Cheney and Weinstock's (2000) questionnaire is underpinned by the assumption that an individual's cognitive and intellectual ability is governed by their views on what knowledge is and how it is evaluated and acquired. In consideration of this, shifts in the relationship between the subjective and objective aspects of knowing are assumed to impact on how the individual views the nature of knowledge. Mature epistemic beliefs are considered to be formed when there is a shift from a radical objective stance where knowledge is viewed as certain and objective, to an objective/subjective stance which allows for both uncertainty and the possibility of the evaluation of knowledge.

5.2.4 LEUQ pre-intervention results. According to the results of the LEUQ, 14 of the 24 children interviewed across all three cycles indicated an Absolutist stance, seven presented as Multiplist and three were deemed Evaluativist. Within the judgement domains of Taste and Aesthetics, the dominant stance was Multiplism. However, in the final three domains of Values, Social Truth and Physical Truths, in both Cycle 1 and Cycle 3, the children reverted to Absolutism followed by Multiplism. Cycle 2 differed in that Absolutism was followed closely by Evaluativism but this may be explained by the fact that the three Evaluativist children were in this group and their responses skewed the results for Cycle 2.

Table 5. 4: Overall results of pre-intervention LEUQ

Cycle	Absolutists	Multiplists	Evaluativists
Cycle 1	4	1	0
Cycle 2	7	1	3
Cycle 3	3	5	0

The LEUQ proved useful in establishing the approximate epistemic stance of the children and indicated that the majority of the children exhibited Absolutist tendencies (Kuhn et al., 2000). Three of the children indicated what could be termed as Evaluativist thinking in the LEUQ. Of interest was the fact that all three of these children were involved in Cycle 2 of this study (for clarity, the terminology used by Kuhn et al. (2000) will be used from here on to explain epistemic stances). A series of semi-structured interviews and historical enquiries were also conducted with the children to establish if the results of the LEUQ triangulated with the children's beliefs about history. The semi-structured interviews are reported on in the following

section and this is followed by an analysis of the historical enquiries the children engaged with.

5.3 Research question 1: What epistemic bottlenecks inhibit the understanding of historical evidence?

This section reports on the findings of the semi-structured interviews and the historical enquiries that were conducted prior to the interventions, and in doing so, answers the first research question. The section is organised around the central ideas the children held about understanding and doing history and pays particular attention to those that worked as bottlenecks to hinder historical understanding. It begins with the children's definitions of the subject and emerging from these discussions was that the majority of the children viewed history and the past as synonymous with each other. The next section explores how this powerful epistemic bottleneck impacted on the children's subsequent understandings of historical knowledge which was also underpinned by the belief that one cannot know what happened in the past unless one was there to directly observe it. The following section discusses the children's experiences of doing history and how this experience may have influenced their understanding of the subject. The final section looks at children's ideas around multiple perspectives; a central feature of historical thinking but also a strong indicator of the epistemic beliefs that a student may hold about knowledge in general.

5.3.1 Defining history: Even the words I'm saying are history. When asked to define history, the majority of the children from all three cycles referred to history as "the past" and this belief about the nature of history proved to be one of the main epistemic bottlenecks the children articulated during the interviews. Ciara (Cycle 2), for example, explained that "history is what happened like two minutes ago, that's one type of history but it's also what happened ages and ages ago." Like the majority of the children interviewed, Ciara was very clear that the terms "the past" and "history" were not only synonymous with each other but that every single event anyone encounters can be considered as history. Rachel (Cycle 1) elaborated on this point and clarified, "like the skipping that we did today, that's history now" and in a similar vein, Dawn (Cycle 2) stated, "even the words I'm saying are history." Across all cycles, the children interviewed related history to "the past" in similar ways and referred to how their own immediate past is, in fact, now history.

This conflation between history and the past can also be held by many of the adult population and in everyday conversations these words are often used

interchangeably. This is particularly evident in popular culture and is an ever-present feature in the public discourse children encounter in their daily lives through textbooks, media and museums. Although these words share a semantic connection, they are, in fact, two very different constructs. While the past can be described as encompassing all events that have happened before this precise moment in time, history is the process of organising those events into comprehensible and connected narratives which allow those in the present to make sense of them. History, therefore, can be considered as the selective reconstruction of events from the past and misunderstandings can occur when the word history is used to encompass not historical narrative or interpretation, but the entirety of all events that have happened.

British historian Alan Munslow (2010) labels this tendency to connect the two terms as *ontological dissonance* and, as was evident from the interviews, this dissonance resulted in substantial disparities (and in some cases, perplexity) in terms of how the past itself was conceptualised. One student, Sammy (Cycle 1), remarked that “history is all about the past” and in doing so, articulated his belief that history is everything up to what is happening at this current time. He illustrated the confusion this time paradox created for him in his next sentence: “It can't be about the present or the future but history is right now. It's hard to explain (*pause*), I really don't know what history means.”

Waldron's research, exploring Irish primary children's perceptions of history (2003), also found that this idea dominated the discussions amongst the children in her study. Arguing from a capacity-building perspective rather than focusing on the limitations of children's understanding of history, Waldron's analysis of 196 children's perceptions of the subject found that while children equated the past with history, they also held what she termed as an emergent understanding of history as a field of study, indicating that primary children have some sense of the complexity of the past. An emerging awareness of the complexity of the past was also a prominent feature in this study. For example, Rachel remarked, “I think history is about the past and it is about remembering people who are really brave and did really brave things. History is the past but sometimes, like right now, in five years' time could be history, like this interview is history to me because, like, I'll be like older and I'll be like ‘oh I remember that’ that's my history. But that's not famous kind of history.” As well as projecting herself as an active participant into this temporal continuum, Rachel also touched on a number of the forms that history can take such as narrative, remembrance, commemoration, personal history and public history. Though Rachel

equated history with the past, within her definition was a nascent understanding that history is more complex than simply the past.

Highlighting his understanding of this complexity, Danny (Cycle 1) began with a definition of history as the past but as he considered this, his definition became increasingly more complicated and he went to great lengths to overcome this complication:

I think history is something from the past that happened, like, around long ago, like history could have happened like a minute ago but that would be kind of weird that it happened a minute ago cos it's not really that much history is it really? But, like, if it happened longer ago you'd know about it.

It appears that Danny, like Rachel, struggled with Munslow's ontological dissonance in that he put forward an explanation that connected the terms history and the past but in doing so, realised that there must be another defining feature that makes something from the past worthy of historical study. This additional feature he then identified as time itself, the further back in time the event occurred, the greater the likelihood that it will be studied at some point in the history classroom.

The conflation of the past with history also had considerable implications for how children distinguished between the interaction of the factual aspects of the past with the disciplinary elements of doing history. For many of these children, not only was history and the past interchangeable but being good at history involved remembering everything that happened in the past. Katelyn (Cycle 3) described history as "like facts from the past, and all, that tell us about what life was like before we had the stuff we have now." In addition, she argued that "if you can remember different things, knowledge, that's what makes you good at history." Likewise, Daire (Cycle 2), who defined history as "something to do with the past" maintained that someone who is "good" at history would have to have "a really, really, really good memory, like when a historian is having a test... he would have to remember. Somebody who is good at history would learn a lot of stuff like The 1916 Rising and they know a lot of facts about it." This interplay between remembering events of the past and defining history seemed to prompt epistemic beliefs that equate studying history to the accumulation of facts. A number of the children who shared the opinion that history was the past also believed that doing history in school required the individual to remember lists of dates and events. Furthermore, by viewing history simply as the past, as all that has happened before now, for many of the children, the need for historical interpretation or argumentation was removed. This, in turn,

reduced the discipline to a retelling of past events or as Calvin (Cycle 1) succinctly put it, a subject where you just “read, learn and do questions” and “sometimes you just do a worksheet.”

It was quite telling that the children in Cycle 1 and 3, who had experienced a textbook approach to history education, made no references to the role of evidence or the act of interpreting evidence when initially defining history. In fact, the majority of these children referred to history as being about facts, myths, legends or “a story about the past” that you can “get it in your book” (Brad, Cycle 3). Rather than defining history, a number of children chose to explain it through examples such as the bombing of Dublin in 1941, the coming of the Vikings to Ireland and the Easter Rising of 1916. At first glance, this seems to be an allusion to the primacy of content knowledge, but on a deeper level, it is also an acknowledgement of the many forms that history can take. Similarly, Waldron (2003) found that many of the children in her study also included a range of national, personal and international history when defining history, indicating not only an awareness of the scope of history but of the existence of different branches of history.

Most of the children from Cycle 2 had experienced an enquiry approach to history education for two years. A large number of these children, drawing on their own experiences of using evidence, referenced history’s interpretative and constructed nature. Seoda, for example, defined history as “the past and builds up from all the information you get from looking at the facts.” This idea was also articulated by Róise who described history as something historians study “to find out what really happened, names, what was their involvement, who was involved and the load of things that happened, like little events that were built into big events.” In articulating her ideas, Róise demonstrated her understanding of history as an examination of change over time or of events that hold some sort of significance. She described history as a study of “big changes to the world” and elaborated that “some parts of history are things that, changing the world, and things that had a big effect on everything. Like when somebody done something that changed everything.”

Gavin (Cycle 2) also referred to history as a study of change over time and explained that history is studied in school “so we know what is around us, like today we went on a history walk, we heard that Fairview Park was water and mud. We think that it was always the park but in 1916, it was mud and water. We learn history so that we know how things have become around us.” Gavin’s comments regarding

the purpose of history as a school subject were of particular interest as they reflected an understanding that there are historical reasons for the ways in which the present is organised and represented. In outlining this, Gavin's response reflected the Evaluativist stance he scored in the LEUQ.

Although the children from Cycle 2 had experienced an enquiry based approach to history, like the children from the other cycles, they also conflated the terms history and the past. Only one student from this cycle, Daire, viewed history as a process that involved memorisation of key events of the past; the others hinted at the constructed nature of history and grounded this in the importance of evidence. Almost none, however, referred to the argumentative nature of the discipline. One student who did was Gavin (Cycle 2) who stated:

A historian needs not just to be able to look at one source but to look at others and work around all that. You would have to use everybody to get a picture. Being a historian is like being a teacher, like during your time when we come in (from lunch), you have to listen to what everybody is saying to know what's going on. You have to find out.

Despite holding this view, Gavin still defined history as “everything that happened in the past, like the big things; 1916, any wars and things that happened before we were here.”

5.3.2 Knowledge: We can't really know because we weren't really there.

The majority of the children in this study held a belief in oral testimony and used a transmissive model to explain how people find out about events in the past. Many suggested that this information was handed down in families through the ages by word of mouth until, eventually, somebody in the family thought to write it down. As Rachel (Cycle 1) explained, “I'd say maybe like a family may have had one book and it was about one certain thing. They might have got the book like ages and ages ago and they pass it on.” Danny (Cycle 1) also argued, “like maybe there's one big book that has everything in it? And stuff gets taken from that and put in other books? But only some of it does, that's what I think, not that it's all in one book but that there's a set of books for different things, old books.” The majority of the children spoke of the probable existence of this one big book (or many big books) filled with the events of the past to explain how historical knowledge is acquired. Though on initial inspection this seems a rather unsophisticated view of the origin of historical knowledge, it is quite logical and has some basis in fact. Chronicles, which bear many similarities to the children's idea of “one big book” were one of the earliest

forms of historiography. In fact, much of Irish society's knowledge of life in early medieval Ireland originates from "big books" such as the Annals of the Four Masters.

A number of children mentioned the internet as a means of learning about the past. Ciara (Cycle 2) identified the internet as a source but cautioned that sometimes the internet could be wrong. Rachel (Cycle 1) too, advised of the dangers of using Wikipedia because it is "full of lies, you can just backspace in Wikipedia and write your own stuff." Sammy (Cycle 1) was initially certain that all information comes from technology, especially iPhones, and seemed perplexed when asked where the iPhones got the information from. Eventually, like Sofia, he fell on a transmissive model and decided that further historical information could be obtained from "a person in the museum" who gets his information from "his mam or his dad and from their mams and dads and then the book makers write it all down."

Daire (Cycle 2) claimed that historical knowledge is obtained from the past: "You know, my Grandad was in the past and he had nothing. We get our information from people who lived years ago and are still alive now." Knowledge of life in the past, according to Daire, originates from the stories that people pass on. In essence, Daire was referring to the importance of oral history, an often overlooked but important aspect of school history. Oral history not only serves to make history relevant to children, it provides a link between them and times that have passed. Most families have this type of connection to the past and the fact that Daire and many other students drew on this type of history illustrates how important such links are in fostering a sense of period, place and personal connection to the subject. While information about the past is acquired in this manner, missing from Daire's explanation was the role that other forms of historical evidence may play in this reconstruction. In fact, conspicuously absent from many of responses, particularly those from children in Cycle 1 and 3, were references to evidence, sources or artefacts and their role in the construction of historical knowledge about the past.

The lack of distinction between the terms "history" and "the past" led to some confusion around how knowledge about the past is acquired. Sofia (Cycle 1), when asked where historians get their information from, replied, "they get it from the past" as if historical knowledge was simply something that one could reach into the past and grab to examine. Sammy also shared the belief that historical knowledge was obtained directly from the past but added that as the past no longer exists, it is impossible to know what actually happened: "Well, history is ages ago so if they

were dead, we would never know because it's over. I don't really know, cos if it happened in history, how could you tell?" In this statement, Sammy touched on what can be considered as another epistemic bottleneck, one that appears to be connected to the confusion between the two terms: a belief that much of the past remains unknowable because it was not personally experienced. Katelyn also expressed this belief and remarked, "We can't really know history because we weren't really there." Indeed, a number of studies acknowledge this as a common preconception that students hold about the nature of historical knowledge (Kölbl & Straub, 2001; Lee & Shemilt, 2004).

Russell (1910) proposed that knowledge falls into two broad categories: *knowledge by acquaintance* and *knowledge by description*. Knowledge by acquaintance is based on direct or personal experience and instances of this can include interactions with places, books, people or events. Knowledge by description, however, is knowledge not acquired by direct experience and can include knowledge acquired through photographs or reported events. This idea of a knowable past based on direct experience was very evident in the children's comments about historical knowledge, even those who had experienced enquiry-based historical practices. Ciara (Cycle 2), for example, remarked on the complexity that holding this epistemological view of historical knowledge can create when dealing with history:

Say if a Viking family was still alive, you could go to the family, but you have to make sure it's the family and not some random stranger, and you would have to make sure that they knew who you were talking about because the family would have evidence.

R.G. Collingwood (1928) argues that "theories that take acquaintance as the essence of knowledge, make history impossible" (Collingwood, as cited in Dussen, 1994, p. 234) for how can those in the present know a past they had not experienced? The idea of a direct transmission of knowledge through acquaintance, from generation to generation, provided a plausible explanation for many of the children who held this belief. Sofia (Cycle 1), who had earlier expressed both a dislike and disinterest in history, found this topic very intriguing and became quite animated when describing her ideas about historical knowledge:

Some of it could be true and some of it couldn't be true but you'd never know because you've never seen what actually happened because you weren't born when it happened. We only know if you are there so somebody who was there writes it down. But they could, they could still be alive, you never know, and

then they would write the book themselves or they could tell the story to their family, or if there's no Vikings left alive you can find someone who was related to them, and related to them, and related to them, and then the person that still alive now, they were his cousins, sort of, and they passed the story down. It's, it's making sense to me now that I am thinking about it, so somebody who was there writes it down but they could they could still be alive you never know, and then they would write the book themselves or they could tell the story to their family... they would go back to a book, they might create more books. Maybe they could look back on the History Quest to write more books or maybe add a bit more to the story by trying it, like, the part of History Quest that is already written? They could try to see what happened next or if it is ending at a good part they could try to carry on the story.

In her comments, Sofia managed to articulate a number of the epistemic beliefs commonly held by these children but of particular interest was the fact that she also highlighted how these ideas influenced and constrained her understanding of history. She clearly outlined all the issues she had with a challenging subject such as history and illustrated how her everyday common-sense ideas about knowledge conflicted with the idea of history. As Lee & Shemilt (2004) point out, the misalignment between everyday assumptions and the criteria on which historical knowledge is based can pose a challenge to students and this is very evident in Sofia's comments. Her argument that one can never know what happened because one was not there is consistent with a view of the past as known, singular and fixed. Lee and Shemilt (2004) have found that many students possess a strong belief in these types of theories and as a result, believe the past can only be known if they were there when it happened.

Sofia's comment "it's making sense to me now that I am thinking about it" is particularly interesting as it seems to capture a shift in Sofia's epistemic thinking about the past that may have been prompted by the discussion itself. Reflecting upon this unknowable past caused her to think about how knowledge of the past might be constructed and she considered a range of plausible explanations to disengage herself from the conceptual impasse she found herself in. This resulted in a move towards the idea that historical knowledge is derived from direct transmission through acquaintance. However, this shift also caused her to consider evidence (through testimony and the writing of books) as an important element in the construction of

historical knowledge, an element that had been missing in her previous discussions around history.

Several other children began to see that their initial explanations were becoming increasingly uncertain; through extending their answers they began to work out new theories on how historical knowledge might be constructed. Dawn (Cycle 2), for example, began with a transmissive view of historical knowledge using information passed through Egyptian families to explain how those in the present know about ancient Egypt. When pressed further, she gave the internet as a source for much older history, and when pressed again, she began to think more on the role historians play in constructing historical knowledge.

CníC: What about before the Internet? When I was little there was no Internet to get information from.

Dawn: Research? Or maybe they could ask people like historians? They could see what they think about it and get different opinions from people like on how mummies are mummified? They could have different opinions on it. Like one could think one thing and another could think another and they could argue?

Dawn, when questioned further, showed she had some understanding of the constructed nature of history and mentioned the existence of multiple interpretations of historical evidence. As was found with Sofia, Dawn's responses showed an increasing awareness of the complexity of the discipline and she also introduced the idea of different opinions and historical argumentation. Ciara too, when pressed, revealed a much deeper understanding of how historical knowledge is constructed and mentioned sources such as census records or artefacts. Egyptian papyrus, she argued, provided evidence that "tells us what they wrote on."

Although the majority of the responses relating to the interpretative nature of historical knowledge and evidence stemmed from the responses of children from Cycle 2, Danny from Cycle 1 also saw that historical knowledge was grounded in evidence from the past and that this evidence was incomplete. Ivan from Cycle 3 also had very clear ideas about historical knowledge and in particular the role of the historian in constructing it: "They gather evidence. They write it down and they interview people, they read what other historians writ down, they go to the place that the event was happening, they look for evidence there, they write it down and then they kind of put it together."

5.3.3 Experiences of history: You have to judge if it's true or not. One of the strongest outcomes of the How People Learn project (Bransford, Brown & Cocking, 1999) was the finding that students' prior knowledge and assumptions played an influential role in how they made sense of the past. Subsequent research indicates that inherent tensions between the way the past is conceptualised outside of the classroom and the way it is practised within can create challenges for students (Wineburg, 2001; Lee, 2004). In light of this, it was necessary to interrogate the children's actual experiences of history to ascertain the influence these may have had on the children's epistemic beliefs about the subject.

The history textbook *History Quest* (Fallon, 2006; 2012) was the dominant resource used by the children involved in Cycle 1 and Cycle 3. *History Quest* follows a very traditional approach to teaching content-focused history lessons by presenting historical topics in narrative form. Each chapter concludes with a series of higher and lower order questions that are primarily designed to assess the children's factual retention. Ivan (Cycle 3) outlined the approach generally used in his classroom as "We would read, you know, *History Quest*, we read it and then we talk about it, like what happened and all that, and then we would answer some questions so that we actually understand." Ivan's experience of doing history in the classroom was in direct contrast to his earlier understanding of the role of the historian. Whereas he saw the historian in an active role searching for evidence to construct an understanding of the past, his own role in the history classroom was centred on reading the text and understanding the content from a substantive perspective. In fact, when discussing their experiences of doing history, almost every child in both of these cycles mentioned this textbook and the importance of recalling information. For example, Calvin (Cycle 1) described doing history as "We just, like, read the story and done loads of the questions. That was it. You can read myths and legends and it asks you questions all about it, like "where did he find the thing?" and "do you think this is real?"

These binarised conceptions of *real/not real* or *true/false* were very evident in the children's discussions around history. In fact, Calvin (Cycle 1) initially described history as "like it's all about, there can be false stuff and there can be true stuff. Like there are things that you don't know could be true and things that you don't know that could be false. Learning about all the things, like stuff that you think is real and stuff that is not, like Cuchulainn." Sofia (Cycle 1), who was of the same opinion, referred to the importance of knowing what is real and what is not real on numerous

occasions throughout the interview. This belief was also very strong with the children from Cycle 3. Ivan, who earlier in the interview displayed a sophisticated understanding of the nature of historical research, described his experiences of doing history as “you find evidence [in the textbook] and you have to judge if it's true or not.” While evaluating the veracity of evidence is an integral element of historical thinking, the real and not real dichotomies appeared to reduce the study of history to a simple case of true and not true for some children and this may have been driven by the content of the textbooks in use in this particular school.

This textbook justification was evident in some of the responses from the children in Cycle 3 and Eimear actually connected the idea of “real and not real” to her reading of the class history book: “History books, for example, they tell you when something is fake like a myth... even the book says they are fake, so why do we even study them? The legend ones can be real but myths are fake.” Although Eimear demonstrated an understanding that legends often have a basis in historical fact, she dismissed the study of myths because according to her criteria they are “fake” and of little historical use. Similarly, the binaries of “real” and “not real” had an impact on how Sofia (Cycle 1) viewed both the past itself and how she viewed the discipline of history. Sofia defined history as “myths which are not real” though she hedged this statement by adding “well some of the myths could be real like the Giant's Causeway.” She saw the purpose of studying history as “to learn it so that you understand, like...oh, I don't know, what is real and what is not?” Her comments about a trip to the National Museum with her family illustrate how her approach to the past was guided by and indeed limited by these binaries:

CníC: Ok, and is it important that we know what is real and not real?

Sofia: Eh, yeah, like my stepdad knows loads about history and sometimes I ask him things like ‘is this real? Did this happen like with the Vikings?’ with the Vikings, he might bring me over there and show me the broken bits and the pictures and I'd say ‘this is real, it's in the picture.’

Sofia's interpretation of history as being a subject where one separates what is real from what is not real places her in what R.G. Collingwood calls the *scissors and paste* category of historical thinking. Although Collingwood was referring to the practice of academic history, these ideas also have relevance to the child working as a historian. Collingwood's definition of the scissors and paste historian provides a clear explanation of the limits of reducing the study of history to what is true or false. The problem, as Collingwood observes, is that historians who practice such an

approach to history begin with what they want to know and then search for evidence to confirm this rather than considering “what does this statement mean?” (1994, p. 275). When faced with conflicting testimonies, scissors and paste historians impose their own presumptions on which is correct and which can be excluded from their analysis. As Collingwood explains, “The scientific historian does not treat statements as statements but as evidence: not as true or false accounts of the facts of which they profess to be accounts, but as other facts which, if he knows the right questions to ask about them, may throw light on those facts” (p. 275). Sofia’s engagement with history in the museum began and ended, not with a question about the Vikings, but a desire to establish facts as being either true or untrue.

Katelyn (Cycle 3) also exhibited this scissors and paste thinking when she commented on an incident that happened in school: “Like one time, I read something about Titanic, that 45 people survived, that wasn’t true. First of all, I thought it was true and I went into class and I told everybody and then a few of my classmates and my teacher said that 150 survived. It was fake.” The binaries of *true* and *not true* may have influenced how she approached historical evidence. Rather than considering why the numbers of deaths were different, Katelyn reduced the issue of deaths on Titanic to a matter of true or false. Nor did it lead her to investigate further or “to ask the right questions” (Collingwood, 1994, p. 275). For Katelyn, history was reduced to simply finding facts that were true and even more significantly, she relied on a higher authority, the teacher, to decide which of these facts were acceptable.

Waldron's (2005) exploratory study on Irish children’s perceptions of the Romans found that Irish primary history textbooks had a discernible impact on children’s perceptions of the past. While Waldron acknowledges that children do not obtain all their information about the past from the class textbook, her findings suggest that in textbook-led classrooms there is “a remarkable congruity between the themes and ideas expressed by the children and those found in the textbook used” (p. 283). Perhaps the same can be said of the style of questions used in the textbook. A survey of the class textbooks History Quest 3 and 4 (Fallon, 2012; Fallon, 2006) revealed a high number of myths and legends on the syllabus and many of the end of chapter questions revolved around asking “what parts of this myth/legend do you think are true/not true?”

This seems to suggest that the structure and types of questioning in the class textbook may also play a part in forming children’s conceptions of the subject which raises further questions over how much influence the activities contained within the

textbooks have on children's epistemic beliefs about history. Absolutist thinking is characterised by a belief that assertions or claims are facts that can be either correct or incorrect and if, as Kuhn and Weinstock (2002) argue, epistemic beliefs progress from an objective view of knowing to a subjective/objective interpretation of knowledge claims, then end of chapter questions based around myths and legends being true or not true do little to shift Absolutist thinking. While teasing out the validity of truth claims in myths and legends is a worthwhile historical endeavour that allows students consider the values and social mores of a past civilisation, it is one that should be underpinned by discussions around the purpose of the activity rather than an add-on exercise at the end of the chapter. In fact, without such conversations, approaches like this may work towards perpetuating the idea that there is but one objective reality and that history is indeed simply a matter of discerning between what is true and what is not true without searching for credible justification for these choices.

The children from Cycle 2 of the study had a very different experience of doing history in the classroom. In this class, the children used an enquiry approach to history where the focus was on the children working as historians as opposed to textbook instruction. Ciara describes this approach as:

We look at old evidence and photos. Like when we were doing the census, we looked at the names and streets and who lived there and what they did. Looking at old artefacts and going and looking at old gates and comparing to what we have today... to actually go out and do it like we did on Kesh Road when we looked at the old gates.

Notably absent from all the interviews conducted with the children from Cycle 2 was any reference to the binaries of real and not real which lends some weight to the argument that the textbook played a part in shaping some children's conceptions of history in both Cycle 1 and Cycle 3. In fact, the use of textbooks was a rare occurrence in the history lessons the children in Cycle 2 experienced. These children also indicated a more critical approach to the contents of the history textbooks. Róise, for example, argued that "sometimes the history book is wrong" and when asked to explain, she connected this statement to her experiences of engaging with a variety of evidence: "Well, sometimes you show us different things that are not the same as the history books." In this statement, Róise showed a growing awareness that there is more than one story of the past. Such awareness is, in fact, a central aspect of historical thinking.

5.3.4 Multiple accounts: One person is right, that is all. Kuhn and

Weinstock (2002) identified students' epistemic beliefs as being either Absolutist, Multiplist or Evaluativist. As discussed in detail in Section 2.5.1, Absolutists view knowledge as an accumulation of absolute, fixed facts and from this point of view, there is only one right answer. Given this position, multiple perspectives are unattainable. Multiplists; however, view knowledge as both subjective and contextual and consider multiple viewpoints and perspectives as equally valid opinions and ideas. From a Multiplist viewpoint, multiple perspectives are considered possible however, all opinions and perspectives are given equal weight. Evaluativists recognise that there are various criteria by which to judge truth claims and that these claims need to be critically assessed. Evaluativists play an active role in looking for further information and show a tendency to explore issues and events from multiple perspectives.

In terms of history, the concept of multiperspectivity is an epistemic belief that that history is a discipline based on interpretation and that multiple perspectives of historical events and figures are not only possible but essential (Low-Beer, 1997). In history, multiple perspectives are tested against the available historical evidence and are, therefore, subject to revision as and when new evidence emerges. Multiperspectivity, in historical terms, is complex. Not only does the historian need to wrestle with the subjectivity of their own perspectives and cultural biases, but they also must navigate the perspectives of those who created, reported or interrogated sources of evidence. Furthermore, they also have to navigate the complex terrain that includes the perspectives of peoples from the past, people whose realities may be far removed from their own in a world where "they do things differently" (Hartley, 1953, p. 9).

To determine the children's epistemic beliefs about historical knowledge, questions relating to the issue of conflicting accounts were asked during the interviews and these provided a wide range of answers. The children were asked if it were possible to have two versions or accounts of the same event if nobody was lying. As predicted, children who indicated an Absolutist stance in the LEUQ tended to think in absolute terms. Initially, some children had difficulty since they had misunderstood the problem posed. Daire (Cycle 2) for instance, took the question literally to mean people's own mistakes and seemed to find the question amusing:

If two people saw the same thing and said something different, um well, one can't be right because one of them has to be right. It can't be both of them, it

has to be one or the other. Like if you want an example, if one person said he 1916 Rising was in 1916, and another person said The 1916 Rising was in 1917, then he would be wrong. That's why it's called The 1916 Rising you know.

Daire found it somewhat difficult to approach the question and on his second attempt, he used his knowledge of the North Strand Bombings in Dublin in 1941 to explain, “like if somebody said Germany bombed us and another one said France bombed us, I would believe the one who said Germany bombed us because Germany did.” Eventually, after a number of attempts, Daire arrived at the conclusion that “one person is right, that’s all.” As was envisaged, the majority of the children indicated a similar Absolutist stance in regard to conflicting accounts in history. This stance was identified by phrases such as “there can't be any other stories, if there were one would be fake” or “there's only one way that something can happen, only one real story of history but there’s lots of fakes” (Sammy, Cycle 1). Even children who had exhibited more subjective leanings in other areas tended to fall back on this perspective, although in some cases there was an acknowledgement that there existed some form of naive criteria to assess sources. Róise (Cycle 2), using the example of friends fighting in school, equated this to a numbers game, because, as she argued, the majority always wins: “So let's say there's 150 people and half of them believe one story, a quarter of them believe another story and a quarter of them don't know. Well then, the half of them will be believed because they are the bigger crowd.” Dawn and Jenna were also of the opinion that it came down to a numbers game.

Yeah well if two people had different stories about the same thing, you would see which one got the most amount of votes and then you go with that one, but you could never know which one was right or not, unless you went back in time. Ha ha! We can't really tell because we can't go back in time so we don't know which one is real (Jenna, Cycle 2).

These statements were consistent with the progressions identified by Lee and Ashby (2000), Lee and Shemilt (2003) and Lee and Shemilt (2004). Their body of research identifies several such recurrent ideas which they regard as “historically defeatist” because they make history an impossible enterprise.

Of all the children interviewed, Gavin (Cycle 2), who scored as an Evaluativist in the LEUQ, appeared to be the only one capable of seeing beyond a *copies of the past* perspective and spoke about doing history as “a bit like being a teacher, you have to listen to all sides to find out what’s going on.” Using the

example of a King to illustrate his point, Gavin spoke of how some people might regard him as a good king and write positive things about him but others may see him in a negative light and highlight his faults: “Someone from one side would say the king was a great man and always wore brilliant clothes and was so nice to everyone, and the others would be saying ‘the king is horrible he’s nasty. He’s bringing in water charges and everything!’” To reconcile the conflicting accounts, Gavin saw that perspective and opinion worked together. He also saw the acts of corroboration and comparing to other accounts as being crucial. According to Lee & Shemilt’s criteria (2004), it would appear that Gavin had begun to dismiss the idea of accounts as copies of the past and used criteria to judge the weight of the evidence instead of just choosing between opinions.

The semi-structured interviews revealed that many of the children held several bottleneck beliefs about history. The most prominent of these was a belief that the past and history were synonymous with each other. Equating history with the past can cause children to develop a series of assumptions based on their everyday encounters of a knowable past they have directly experienced. In fact, many of the epistemic bottlenecks encountered thus far had their origins in such everyday interactions, and therefore, were quite logical in nature. Many children began with what could be termed as an objective view of history and this serves well enough when history is studied from the textbook rather than constructed from the interrogation of evidence. Facts were viewed as authorless bodies of information to be learned off by heart and historical narratives were viewed as single, true accounts of a fixed past. History, for many of these children, was either “the past” or “what you get in the textbook” (Callum, Cycle 1) and the historian’s job, whether the professional or the scholar, was to piece together the facts of the past with little attention given to the interpretative nature of historical research.

While techniques such as interviews can provide solid information about children’s thinking, a more complete picture can be obtained by observing children engaging with evidence in more naturalistic settings and contexts (Barton, 1997a). A historical enquiry on the death of King Rufus was used with small groups of children before each cycle to allow for such engagement. For this activity, no instructions or advice on reading and interpreting the sources was given to the children. The purpose of the activity was to gather baseline data on how the children engaged with historical evidence and to identify the epistemic bottlenecks the children encountered while doing this. The topic of King Rufus was selected because there are a variety of

historical interpretations of the event. The activity was framed around the enquiry question: *The Death of King Rufus: An accident or an assassination?* and children were presented with a broad range of evidence which included contemporary primary sources, a selection of historians' interpretations and an image of the incident (sketched in 1885, almost 900 years after the event). They were also provided with an enquiry frame to assist them in sorting their evidence (all resources used in the enquiry are located in Appendix H).

The enquiry-based activity allowed the children to explore the nature of sources in history with particular reference to conflicting sources of the same event and was designed to illustrate both the epistemic stance of the children and their use of historical thinking skills. This activity was useful in uncovering how the children's epistemic beliefs informed their engagement with evidence. Overall, it was noted that the children sifted through the sources without attaching any importance to the type of source or when it was written. Only a very small number of the children noted or referred to any of the source details. In general, the details that were used to bolster claims were based on conjecture and more often, pure guesswork. The following analysis of the historical enquiries is organised around the main bottlenecks experienced by the children.

5.3.5 Snapshots of the past. After reading the introduction, which outlined the background to the enquiry, the children, arranged in small groups, set to work. Immediately, all children were drawn to the image and began to speculate about its contents. The image, a lithograph depicting the death of King Rufus in the New Forest, England in 1100, framed every group's discussion. The lithograph was treated by most as if it was an exact reproduction of the incident, despite the fact it was an illustration and was created in 1885, almost 800 years after the King's death. The black and white image, dramatic in composition, shows the king lying dead on the ground in a forest. An arrow protrudes from his chest. To his right, his horse stands patiently by, and in the distance, a man is galloping away on horseback whilst glancing over his shoulder at the body. This illustration was used by the majority of the children to reinforce or verify the claims they made despite the availability of other primary and secondary sources.

For example, Danny and Calvin (Cycle 1) were both very taken with the image and crafted their argument on the death of King Rufus completely on conjectures based on the illustration. In fact, the image was of such importance to them that other sources were dismissed and the boys' attention was drawn,

repeatedly, back to the image. Viewing the image as a snapshot of the incident, the boys formulated their own interpretation of the events in the forest that day, even using role-play techniques to act out the scene in front of them. Like many of the children, they read the image as if it were taken at the very moment of the King's death in the New Forest. Eventually, having acted out the image; assessed the probable trajectory of the arrow and discussed how the king ended up on the forest floor, the boys put forward their interpretation as "that man there, on the horse, he did it." When asked what "that" man's name was, they replied that they did not know because they had not read any of the other sources.

In a discussion after the enquiry, Danny, who had based all his analysis solely on the image, revealed that he had noticed the date of the illustration during the task and had, at least subconsciously, acknowledged that the artist had created it a long time after the event. However, his lack of experience in sourcing evidence led him to dismiss the date in favour of the powerful story the image created "in his mind":

Cníc: How do you know the picture is an accurate account?

Danny: I don't know, we just thought it was because we can picture it in our minds.

Cníc: Was the artist there at the time?

Danny: No. Cos it was drawn in 1880 something and Rufus was killed in 1100.

Cníc: So how many years after the event was it drawn?

Danny: Around 700, no, more!

Cníc: Does that change anything?

Danny: Yeah, it's nearly a 1000 years later, I see that now.

Cníc: Did you notice the date earlier?

Danny: Yeah, we did, but we still thought that was that, like the date has changed it but we still thought, you know, that the picture was the truth, you know.

Once he reflected on this, he immediately saw the sourcing dilemma the date of the illustration caused but his belief in the power of photography had superseded this during the activity and he believed that the "picture was the truth."

Another noticeable feature of Calvin and Danny's (Cycle 1) analysis of the image was their tendency to interpret faces and animals in the trees and bushes of the forest. Known scientifically as *pareidolia* this inclination towards seeing images within the image was quite common among the children of all cycles. It was

particularly evident among those who viewed the enquiry in terms of a conspiracy theory rather than a historical enquiry. These children actively sought clues that were not there and drew on unsupported conjectures or claims. Sofia, Sammy and Rachel, who had read through the other sources, were convinced Henry was the culprit and also employed pareidolia as additional evidence to ensure his conviction.

Sofia: Sammy was saying that looks like somebody there (*pointing to the picture*).

Rachel: Oh that must be Henry. Look at the picture, you can see his curly hair and look closely, you can sort of make out a face there, hidden in the bushes.

Amanda (Cycle 3) also went to great lengths to prove to the rest of her group that the image actually contained a secret clue as to the death of King Rufus. This secret clue convinced Amanda of Henry's guilt and she spent some time trying to convince the others that Henry, King Rufus' brother had ordered his assassination: "Well I was just saying, I saw a face and a body, and I put it (the image) up against the window, and then I *really* saw a head or body so I *really* think it was Henry! Yeah, I think Henry was there and he did it."

Enda's (Cycle 3) interpretation of the illustration was framed around his own experiences of photography. These ideas had a considerable effect on how he analysed the illustration. Evident from his discussion on the placement of the characters was the opinion that the illustration, which he referred to numerous times as "the photo", was a snapshot of that actual moment in the New Forest when King Rufus died:

That's the person there who's been tracking him down (pointing to picture). Maybe his back was turned when the person shot the arrow? Look at the photo, he's facing this way, so if he was shot with the arrow, he would fall this way wouldn't he? He'd fall off the back of the horse, not the side of the horse.

To Enda, the "photographer" happened to be particularly lucky to be in the forest that day, equipment at the ready, to capture the exact moment in time, not when the fateful arrow was shot, unfortunately, but just moments after. His comment "Ah, if he had've been there a few minutes earlier" indicated his frustration that the "photographer" could have actually captured the incident had he arrived to the scene on time. This belief was also evident in his comment "Now if we could get a photo of Tyrell and Henry, then we could look at this picture." For Enda, the details of the

source were irrelevant and his approach was underpinned by a belief in the objectivity of the camera to tell the truth as it actually happened. This over-reliance on the image was common across all cycles and in many instances, the other sources were often used to verify the truthfulness of the image. Indeed, for some children, the image was the only source used to reach a conclusion.

5.3.6 Historical scepticism. Not all children in Amanda's group (Cycle 3) were convinced of the credibility of the image, and in fact, some were quite dubious about using it and made reference to the fact that it was drawn by someone who couldn't have been present at the event. Interestingly, this conversation was not framed around the source date but by the fact that the image was an illustration, and therefore, had been sketched, a process that happens in a studio. This conversation, led initially by Rónan, opened up a discussion that was essentially epistemic in nature. Rónan's questioning of the provenance of the illustration triggered a debate that revealed that these children held complex ideas about the nature of knowledge. As Boix-Mansilla has noted, this turn to the interrogation of non-mediated knowledge, from a past that cannot be recovered, can initiate a sceptical view of history in students (2000) and traces of this scepticism can be found in the exchange below:

- Rónan: We need to ask questions. Like why was he killed? Are there reasons? Who was there? Wait hang on, if that picture was taken, who was there to see it? So who is it that knows that it was like that? Yeah, they probably saw the dead body there. I think we need to forget about the picture.
- Caoimhe: Yeah because it might have been a mistake or something like that.
- Rónan: He might not even have been near the forest because nobody seen it.
- Brad: Is this drawn or is it a photo?
- Rónan: It's a drawing.
- Brad: Yeah but was it sketched.
- Rónan: The artist could have added in some of these details.
- Amanda: Could have added in the man.
- Brad: And they could have added in the dogs.
- Rónan: I don't think he added in the dead body, ha ha ha! Because that was left there. It's not like it's going to move or anything. He could have sketched in the body as it was lying there and used his imagination or could have listened to other people? We need to imagine it. Let them

tell him what they saw like cos nobody seen that, nobody has ever seen exactly what happened. They just seen the body and maybe a few animals in the background.

Enda: How did they take pictures back then? Like if they took a picture of it. Recorded it, you'd know if it's real. Did you ever see, like, the way there was no cameras back then? How were they able to know what it looks like? I mean like, know properly what it looks like without taking a picture? The artist that drew that could have been making it all up.

Rónan: I think, I think we need to get our information from the other sources.

This exchange also uncovered student ideas in regard to issues of objectivity, as, caught up with these ideas, are deeper assumptions about truth and knowledge. Assumptions that are grounded in parallel strands – a realistic one if the epistemic bridge between the past and history can be spanned and a sceptical one if this is believed impossible (Barca, 2005). Rónan, in particular, struggled with spanning this epistemic bridge, as can be seen in his interpretation of the evidence. His questioning of the veracity of the illustration led him to think on the nature of historical evidence in general, and in doing so, he articulated a bottleneck that also featured very prominently in the pre-intervention interviews: that the past can only be known if it has been directly experienced. Connected to this belief was the popular idea among the children that if one could travel in time and be there in the New Forest in 1100, one could witness “exactly what happened”. Being an eye-witness to the historical event, for these children, provided an absolute, unassailable truth. Embedded in this belief is also the idea that a complete and full account of the one true story of the past will be someday obtainable to future historians. The following selection illustrates how the idea of “actually being there” and that of “what actually happened” play reciprocal roles in some children’s understanding of historical knowledge:

Caoimhe: If we were back then, like if we were part of the investigation, maybe we would have been, be able to solve what actually happened but now...

Brad: Maybe he touched the arrow after ... I don't know how that's going to be possible either. I'll go back there. I don't mind. I'll go and see if there's any evidence still left there.

Rónan: The only problem is, like, you know the way the Earth is, the land isn't the same as the land for us that it was then and most of the stuff

would be buried then. If the Earth wasn't like that we could check for fingerprints but they are long gone (*laughs*). Maybe in a couple of centuries they will invent a time machine then we'd actually know everything. (*laughs*) You'd have to be there to really understand everything.

Caoimhe: But we can't check for fingerprints so what can we do?

Amanda: I don't really have any more ideas.

Rónan: That's the thing nobody can really tell, like if I was in yard and I spin around and I hit Callum, nobody can tell if I did it on purpose or not it. It's impossible to tell because we weren't there. Like how the hell would they know one sentence that the king said? 'the good arrows to the good person' how? Did they have audio? Who can tell?

As Lee argues, if students think historically-defeatist ideas such as this then the logical conclusion they come to is that historians must just “be guessing or, worse, making it up” (2005, p. 31) ultimately leading to a view of history as an impossible endeavour. At the heart of this epistemic stance is the *knowledge by acquaintance* position discussed earlier in the chapter. Without what Seixas refers to as the “tools of historiography” (2000), a working knowledge of the disciplinary procedures used by historians, children like Amanda and Rónan resorted to a naive relativism. or as Lee and Ashby define it, a “shoulder-shrugging helplessness” when considering historical evidence (Lee & Ashby, 2000).

5.3.7 Using evidence. When dating a photograph or an image, historians often attend to its' attributions (e.g., the date or location) and use these cues to make judgements about the source. Wineburg's work on the cognitive processes used when considering historical sources (1991), examined how historians analyse primary and secondary documents. From this, three distinctive heuristics were identified as essential to historical understanding. These include: sourcing - determining the provenance of a document even before reading; corroboration - the act of comparing documents with one another and contextualization - positioning a piece of evidence within its own time and space. The following section uses Wineburg's three heuristics: Sourcing, Contextualising and Corroborating and also additional categories of Reconciling Conflict and Unwarranted Claims to illustrate the children's engagement with the evidence.

5.3.7.1 Reading between the lines. As can be seen by the notes I had taken whilst the children from Cycle 1 were engaging with the enquiry, the source details of each piece of evidence was disregarded by the group.

No consideration was given to the date or source: After a lengthy discussion about image, Rachel reluctantly turned to Source 1 and skipped the source details containing the date and authors and went straight into reading the body of text. In fact, at no point during the activity, was any weight given to the origin or author of any of the sources. (Field notes, 2016).

Some of the children from Cycle 2 and 3 did begin to use the source details to interrogate the accounts further. In some cases, children displayed an ability to question aspects of these sources, aspects that Wineburg claims are “unnatural” to our logical minds because they “go against the grain of how we ordinarily think” (1991, p. 7). Enda (Cycle 3) for example, pondered over the Bishop of Malmesbury’s account (Source 1) and noted that the fact that he “tried to get the facts right and wrote about it as well” was important to consider when evaluating the source. He also corroborated the account with other sources thus lending further credibility to the Malmesbury account. “So we have four people that wrote about it. They all have something in common about it.” However, in general, source details were omitted by most children.

Although contextualising did not happen very often during the conversations the children had, it did happen on occasion. Calvin and Danny, for example, identified the period as “when the Vikings were in Ireland” and were aware that bows were a popular weapon at this time. As Barton (2004) found in his research on children’s understanding of time and chronology, some of the children drew heavily on material culture to enable them to place the event. Other children drew on their own, sometimes incorrect, knowledge of the time. One common perception was that Henry, brother of King Rufus was, in fact, the Tudor King Henry of the “eight wives” fame, leading Enda (Cycle 3) to declare, “wait, wasn’t Queen Elizabeth married to Henry? Or some people talk about what he did to all his wives. Maybe Henry was just very evil and all?” Although Enda had engaged in contextualisation, the context he selected was misplaced by almost 500 years and the Henry he referred to was a different Henry entirely.

A number of the children had a solid understanding of the first-order concept of royalty during this period and references were made to kings, queens, coronations and lines of succession. What informed the children’s knowledge of the time (which

is generally not covered in Irish primary textbooks) was not too difficult to pinpoint. References were made to the popular children's history series *Horrible Histories* and at one stage Katelyn remarked how similar the storyline was to the plot of the Disney movie "Enchanted" and her group readily agreed. It is possible that the act of equating the enquiry to popular movie storylines led some children to actively search for elements in the illustration that were not there or to look for "plot twists" (Ivan, Cycle 3) and this may have played a part in some of the fanciful conjectures the children constructed. As these pre-intervention activities show, the children drew upon a wealth of historical knowledge mediated through exposure to school texts, media, popular culture and information gleaned from conversations at home. The range of historical knowledge the children displayed was impressive but it was particularly noteworthy that much of their substantive content knowledge was framed around popular and historical tropes that were presented as unquestionable statements of fact.

5.3.7.2 *Dead certainties or unwarranted speculations?* In general, most of the groups across all of the cycles noted conflicts in the various accounts, the most prominent of these being whether Tyrell was actually in the forest or not when Rufus died. While noted, many groups simply moved on and did not engage with the dilemmas these conflicts produced. For example, Ivan (Cycle 3), when reading, remarked on the conflict and then simply moved on: "He's saying this fellow is getting accused of killing him but this other person is like 'no, I seen him that day and he didn't do it.' Next source, Judith Arnold, author..." For many of the groups, the accounts were treated as sources of information that needed no further interrogation. The accounts acted as repositories of information that contained facts to be gathered. In doing this, inconsistencies were, for the main part, ignored and the facts were extracted and corralled together in a fashion reminiscent of Collingwood's "scissors and paste" approach.

There were instances, however, where children did contest the differences and a variety of interpretations were given to explain conflicts in the various accounts of the death of King Rufus. Most of the children who noted these concluded that the differences between the accounts came down to the fact that someone was lying. Enda, for example, summed it up as "I think he might be lying that he was at a different part of the forest and he was actually there." Enda (Cycle 3), who had a great interest in conspiracy theories, also conjectured that the accounts had been wilfully changed by concerned family members in order to hide the identity of the

real culprit: “What if they had, like, family members that were there that wrote something, just changed their second name to cover up everything?” Group 2 from Cycle 3 took yet another approach to dealing with conflicts in the evidence and explained the differences as errors in transcriptions due to the process of copying them over time, similar to a game of Chinese Whispers. Brad explained how this could happen: “Abbott Suga wrote about the event, so she wrote something about it, he wrote something about it and he wrote something about it” (pointing to each of the other sources).

Gavin (Cycle 2) looked beyond the idea that the sources were simply repositories of information and looked in particular at the dates. The dates, according to Gavin, held the key to understanding why some accounts differed:

Which one is the oldest one? I think I know why all of them are different. The oldest one, maybe that's right because sometimes a story can be changed when people are telling it and people can make different stories about it... like gossip and all that. Maybe the other theories are a bit like that and the oldest one is right?

Gavin then began to sort out the accounts according to the dates they were created. In doing this, however, Gavin dismissed all of the historians’ interpretations because of the fact that they weren’t present at the event.

When conflicts were noticed between the image and the accounts, the matter was generally resolved with deference to the truthfulness of the image. Rachel (Cycle 1) exclaimed, “I think it's an accident!” however minutes later, upon realising that the evidence in the document did not match the image, she pronounced, “wait, now he's lying” and pointing to the image as proof, she added, “But he was in the forest with him so he's lying, so it is an assassination. I knew it! He lied to the people saying he wasn't in the forest but he was in the forest. He's a big, big, big, big, fat liar! Henry, the greedy pig!”

For those children that engaged with these issues, the difficulties of historical interpretation were beginning to make themselves clear. Eimear, Amanda, Caoimhe and Conor (Cycle 3), in articulating their thoughts during the enquiry, managed to capture the complexity that studying events from the past, and grappling with the interpretative nature of historical investigation can cause:

Caoimhe: Henry was there with him that's what makes me think he killed him.

Eimear: But one evidence says Henry wasn't in the forest.

Caoimhe: But one of them says he was.

Eimear: So how do we know which one is right?

Caoimhe: I don't get this.

Conor: Is so confusing, it says he was in the forest and then it says he wasn't in the forest.

Caoimhe: All the sources have different answers, that's what got me off because we all have different answers as well.

Calvin and Danny's (Cycle 1) approach to answering the enquiry question typified the manner in which most of the children engaged with the evidence. This can be summarised as a hedging approach in which they put forward many opinions; however, these opinions were not grounded in the evidence but rather in what, according to themselves, "may" have happened. As both Barton (1997a; 1997c) and VanSledright (2002) found in similar studies, the idea of using information from the sources to support their argument seemed irrelevant and their claims were often unsupported by evidence. By more or less ignoring all the other evidence, Calvin and Danny displayed a naive approach to historical research and given that their experiences to date revolved around reading ready-made interpretations in the class textbook, this is not surprising.

There appeared to be a lack of understanding around the process of historical argumentation across all cycles. This resulted in claims being made that were not grounded in the historical evidence but rather, within the children's own imaginations:

Sammy: Maybe he betrayed his friend? Maybe they had a fight or an argument?

Rachel: Yeah, maybe they went on a horse ride to get over it and have a little chat and say sorry.

Sammy: Oh, oh, I know, maybe when they were in the village, they met this guy talking on his horse and tried to hide him somewhere in the forest.

Notable, particularly with the children from Cycle 1 and Cycle 3, was the liberal use of these unwarranted claims and on the rare occasions when evidence was used by the children, it often did not support or relate to the claims being made. Ivan for example, drawing on the dream King Rufus had the night before, concluded that the death was actually a suicide:

- Ivan: I'm actually thinking now it's a suicide because look, it says the day before the king died he dreamt that he went to heaven so maybe he wanted to go back to heaven?
- Caoimhe: He might have got his friend to shoot him.
- Ivan: Yes because maybe he wanted to go back to Heaven.
- Enda: That is good Ivan.

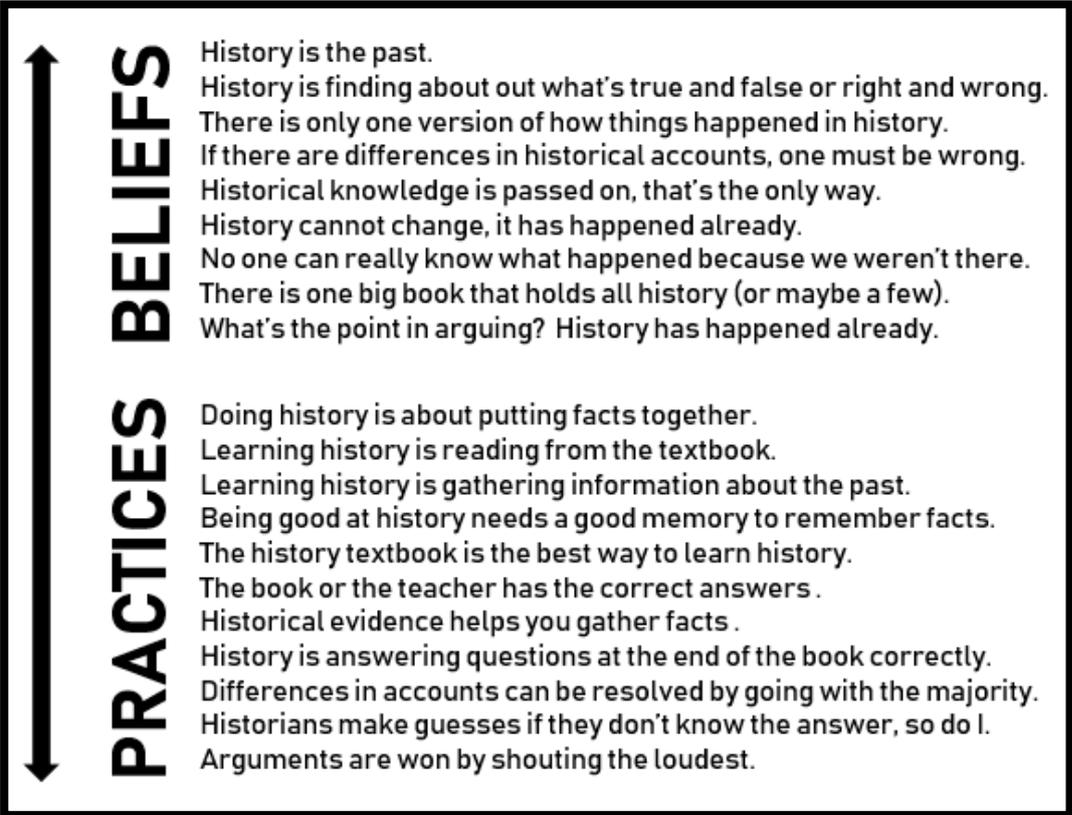
The pre-intervention activities were successful in identifying some of the key epistemic bottlenecks children carried with them into the classroom. The data also highlighted some of the ways in which these bottlenecks impacted on their understanding of the discipline. What was noticeable from the data gathered, was that the children's epistemic bottlenecks about the discipline had a correspondence to how they used historical evidence. This relationship is captured in Figure 5.4.

Equating history with the past was a bottleneck found in all cycles irrespective of the epistemic stance the children held. This can be linked back to the belief held by most of the children, that history was both a fixed and objective series of facts rather than the interpretation and analysis of the past. Building on the premise that significance plays a part in understanding how not all past events are considered to be history, the challenge was to find ways to move the children's conceptualisations of history beyond this static concept of the past by introducing them to the concepts of historical significance and evidence. The pre-intervention activities strongly indicated that the children viewed historical evidence and images as repositories of information and this belief impacted on how they used the sources. The objective, then, was to break down this epistemic bottleneck and introduce the children to the ways of interrogating the evidence rather than simply extracting factual information. A summary of the key bottlenecks found during the interviews and enquiries can be found in Figure 5.4.

Of note was the similarities found between this and Barton's 2001 comparative study between children in the United States and children in Northern Ireland. Of particular interest is the similarity between primary children from the United States and the children involved in this study. Although children in all studies focused on the idea of "big books" and oral transmission, the children from this study, like those from the United States, were less likely to reference other forms of evidence (apart from those from Cycle 2) because they did not, in general, recognise the need for it in the history classroom. Cross comparisons with other studies conducted internationally (e.g., Lee & Ashby, 2000; VanSledright, 2002) show that

there appears to be a commonality to children’s beliefs about history. This in itself is significant as it provides a tentative trajectory of the progression of children’s ideas which can be used to plan activities to challenge these bottlenecks. Building on this observation, a convincing argument can be made for the necessity of a systematic clarification of meta-historical assumptions in the classroom through activities designed to clarify the relationship between history, the past and the role of evidence.

Figure 5. 4: Children’s epistemic bottlenecks about historical evidence



5.4 Design considerations for the HLT

The design of the activities developed for the HLT were informed by the epistemic bottlenecks and preconceptions that were identified in the literature and confirmed by the pre-intervention data. In terms of children’s preconceptions about history, it has been frequently observed that many of these have their origins in children’s common-sense ideas of how the world works (Chapman, 2011; Lee & Shemilt, 2004; Lee & Ashby, 2000). These common-sense ideas, for the purpose of this study, may be viewed as the corpus of cultural and exploratory knowledge they assimilate about how the world works during the course of everyday life and the analysis of the data shows this to be the case for the cohort of children in this study.

Indeed, one of the strongest outcomes of the pre-intervention activities was that the relationship between children's common every-day experiences and their preconceptions about history and historical evidence were both logical and incredibly strong.

Some preconceptions, such as equating "the past" with "history" occur due to the fact that the everyday language children experience is often at odds with the precise use of words in academic discourse. Children frequently enter the classroom with the preconception that the word history has two distinct meanings: a past occurrence (up to this very moment) or an account of a past occurrence (as a discipline). As Bain maintains, these every-day and common sense uses of the word history reinforce the idea that history is but a mirror of the past (2005). He argues that effective instruction in history should begin with helping students see the distinctions between both uses of the word. Furthermore, Donovan and Bransford (2005) maintain that those preconceptions originating in everyday experiences are particularly difficult to re-orientate precisely because they can work very well in day-to-day contexts. However, when this breaks down, such preconceptions can constrain students' understanding of formal disciplines.

In light of this consideration, I decided to challenge these epistemic bottlenecks through the use of analogies. Analogies are often used to assist in conceptual understanding in science and are designed to allow for the comparison of a familiar domain (concepts familiar to students) and a less familiar domain (complex scientific concept) in order to clarify thinking, overcome preconceptions and visualise concepts (Orgill & Bodner, 2007). An analogy links these concepts by identifying the similarities between them and is usually couched in everyday experiences. The familiar concept is called the *analog* or *base* and the unfamiliar concept is called the *target* (Glynn, 1991). Analogies can assist in student understanding by spanning the divide between known concrete concepts and more abstract concepts. (Duit, 1991). Inspired by the effectiveness of Chapman's conceptual analogy using the death of the (now immortal) Alphonse the Camel (2003), often used to introduce students to the analytical requirements of causal explanations, I decided to use a series of conceptual analogies to assist in scaffolding children's understanding

A summary of the activities devised for the interventions is provided in Table 5.5 and the analogies are marked in bold. The first analogy is based on an activity modified from the Stanford History Education Group website and uses the example

of a fight in the schoolyard. This requires the children to consider the issue of multiple accounts and competing perspectives and is framed around the question: can there be two accounts of the same event? The second analogy, that of writing a biographical account, asks children to consider the issue of historical significance and is framed around the question: is history the past? The third conceptual analogy introduces the children to the need for using a series of sourcing techniques and is framed around the analogy of being a “sourcerer’s’ apprentice” (the play on the word sorcerer is purposeful and designed to engage the children). The trigger question, inspired by the confusion around the image of King Rufus, asks the children to consider whether the camera can lie. The final analogy is based on the idea of an Argument Clinic where one could learn how to construct an argument. Again, this is prefaced by the trigger question: what is a historical argument?

Table 5. 5: Summary of HLT 1

Hypothetical Learning Trajectory 1		
Topic	Learning goals	Activity
The Nature Of History	Exploring multiple accounts Introduction to sourcing and perspectives	The Fight (Analogy) The Fighting Vikings
Historical Significance	Exploring historical perspectives Exploring historical significance	Autobiography (Analogy) The World’s Greatest
Images As Evidence	Using a sourcing heuristic to analyse images and documents	The Sourcerer’s Apprentice (Analogy) The Woman On The Bus
Sustain Your Claim	Exploring the elements of an argument.	What Is An Argument? The Argument Clinic (Analogy) The Greatest Class Of All How Do We Know The World Is Round? Why Did Titanic Sink?
<i>(actual lessons in Appendix J)</i>		

5.5 Conclusion

The LEUQ results indicated that, as hypothesised, the majority of children across all three cycles, held predominantly Absolutist tendencies. Although Kuhn and Weinstock (2002) caution that this short instrument does not “provide a full or nuanced picture of an individual’s thinking in the epistemological domain” (p. 130), it does offer an approximation of where the individual may be situated. In light of this, semi-structured interviews and enquiry-based historical tasks were used to gain a more extensive and in-depth picture.

Arising from the children's discussions was the fact that the majority of them, irrespective of which cycle they were based in, viewed history and the past as identical to each other. This influential epistemic bottleneck impacted on the children's subsequent understandings of historical knowledge which was underpinned by another equally influential bottleneck: that one cannot know what happened in the past unless one was there to directly observe it. The influence of this bottleneck became apparent during the historical enquiries and on numerous occasions references were made to this fact.

It also became apparent that exposure to enquiry-based practices can contribute to a view that evidence may be interpreted in a variety of ways. The majority of the children from Cycle 2 (apart from Daire) saw interpretation as a key element of the discipline. Despite this view, many of these children's explanations were still tempered by the argument that the past cannot be known because what happened was not directly experienced by them. Although this position can be considered as an epistemic bottleneck, it could also be interpreted, in some cases, as a growing acknowledgement of the role of interpretation when analysing historical evidence. In relation to history education, the epistemic idea that history is interpretational is tied to an appreciation of the existence of multiple narratives about historic events rather than a singular one (Wansink, Akkerman, Zuiker, & Wubbels, 2018). Based on the results of the pre-intervention activities, the small number of children who held this position appeared to have moved beyond a one-to-one correspondence view of historical knowledge and some of them began to question the validity of historical arguments. It would also seem that those exposed to enquiry-based practices made this conceptual leap faster than children who had not been.

It is also worth noting that, for some children, these conceptual leaps may begin with simply asking an epistemic-framed question. As Sofia (Cycle 1) demonstrated when discussing the origin of historical knowledge, just talking about such topics may have the capacity to open a channel in children's thinking which allows them to push the boundaries of their own conceptions. It was apparent from her answers that Sofia had never considered many of these issues before and her initial explanations were not thought out but were immediate reactions to the questions posed. When given time to think, her responses became somewhat more considered. It was as if the conversation itself helped her decide where she stood in terms of both historical knowledge and knowledge in general.

The same could be said about Sammy's responses (Cycle 1). Initially, he claimed not to know what history (or a historian) was and seemed confused between the role of the historian and the role of the scientist. Drawing on whatever models popped into his head - scientists, Bigfoot, aliens, dinosaur bones, Indiana Jones, Sammy, seemed to be quite confused about the subject. Further questioning, and giving him the space to consider the questions posed, revealed him to be quite knowledgeable about both what a historian does and how they construct historical knowledge. This may indicate that questions promoting reflective dialogue can provide a context for children that allows for the activation of particular forms of epistemic thinking.

Waldron's aptly titled "A Nation's Schoolbooks Wield a Great Power", an exploratory survey of Irish children's views of the Romans, evaluated the influence of the textbook in shaping student historical consciousness and found it to be pervasive in forming children's attitudes towards people in the past (Waldron, 2005). Written at a time of great educational change, and on the eve of the official introduction of the Revised Primary History Curriculum, Waldron speculated on the changes an enquiry-led history curriculum might bring. Although anecdotal evidence suggests that teacher-led textbook book is still prevalent in Ireland (NCCA, 2008a, 2008b; Waldron et al., 2009), the evidence from Cycle 2 seems to confirm Waldron's hypothesis that pedagogical practices such as an enquiry approach to history can introduce children to the complexities of the past and engage them in higher levels of abstract and critical thinking in terms of historical evidence.

While numerous studies have shown that training in the use of specific sourcing heuristics (Reisman & Wineburg, 2008; Wineburg, 1991) improve historical thinking skills, these studies, in general, attend to the mechanics of historical thinking rather than tackling the epistemic preconceptions students hold about the nature of history and historical knowledge. As can be deduced from the children's engagement with historical sources, these preconceptions not only inform children's views of the discipline, they also guide how they engage with historical evidence.

Teaching students to use heuristics such as sourcing provides them with a set of strategies to employ when engaging with historical evidence; however, as research in mathematics education has shown, (Skemp, 1976; Sarama & Clements, 2009) there is a difference between relational understanding and instrumental understanding. For example, teaching students a sequence to solve a mathematical

equation does not necessarily translate into an understanding of the nature of mathematics. Likewise, it could be argued that teaching students a set of strategies for using historical evidence, without attending to the underlying concepts, may not translate into an understanding of the nature of history.

Realising that a historian constructs an interpretation of the past may contribute towards enhancing students' conceptual understanding, yet this central epistemic concern is one which has remained largely unproblematized in current debates on the teaching of history. Attending to these epistemological ideas needs to be a pre-requisite for deep conceptual understanding of the discipline. The following chapter describes the results of the children's engagement with the HLTs, and in doing so, outlines the pedagogical process used in this study to attend to these ideas.

CHAPTER SIX: CHALLENGING EPISTEMIC BOTTLENECKS

6.1 Introduction

This chapter reports on the children's engagement with the HLTs from all three research cycles and pays particular attention to the impact the activities had on effecting conceptual change (or not) in terms of the epistemic bottlenecks they were designed to target. The chapter begins with an overview of Cycle 1 which includes a discussion on the first cycle of teaching interventions, the Conceptual Change Model that underpinned these and the conceptual analogies that were incorporated into the design. The results of the in-cycle daily analysis of student engagement and the retrospective analysis that occurred at the end of this cycle are then discussed.

As noted during this cycle, elements of Stepan's Conceptual Change Model were used to frame the order of the activities in each unit but in-cycle analysis showed this format was not having the desired impact on *all* students. This led to the development of a new model for conceptual change based on the use of analogy. The Analogical Conceptual Change Model (ACCM) that emerged from the analysis of the interventions is then described. This ACCM was used to underpin the pedagogical design of HLT2 and HLT3.

The chapter then explains the modifications the subsequent trajectories underwent as a result of the changes to the conceptual change model. As Cycle 2 and Cycle 3 were quite similar in structure, content and participant size, they are reported on simultaneously. This section is delineated into four themes that correspond to the themes of the four HLTs used in HLT2 and HLT3: multiperspectivity, historical significance, using evidence and argumentation. The chapter concludes by discussing the results of the post-intervention LEUQ, the semi-structured interviews and the historical enquiries.

6.2 Teaching interventions: Cycle 1

The first cycle of the teaching interventions was undertaken with five third-class primary children to explore the ways in which their frames of reference in relation to defining and approaching the discipline of history could be challenged and re-orientated towards a more critical approach to studying the past. Four intervention units were designed, each fashioned in a pedagogical pattern based on Stepan's Conceptual Change Model (1996). The adaptations to this model are outlined in Table 6.1. This section reports on the results of the first cycle of teaching

interventions and begins with an explanation of the modified Conceptual Change Model (Stepans, 1996) (See Table 3.5) and how this was modified further during Cycle 1.

Table 6. 1: Conceptual Change Model (adapted from Stepans, 1996)

-
- Uncover, through discussion, current beliefs about history
 - Use this information to design analogical activities which will confront preconceptions
 - Engage with activities grounded in using historical sources to explicitly teach students the essential features of the discipline
 - Engage in evidence-based argumentation
-

One key adaptation to the original Stepans' model was the introduction of conceptual analogies to create cognitive *disequilibrium*. Disequilibrium, according to Piaget, occurs when an individual encounters new, discrepant information. In order to regain *equilibrium*, one can either assimilate the information or manage it through a process of accommodation. Piaget, one of the first to systematically study children's cognitive development, proposed that these two processes of *assimilation* and *accommodation* contribute towards cognitive growth. Assimilation is the process of modifying contradictory information so that it matches current schemata (units of knowledge); however, a state of disequilibrium takes place when new information does not fit into existing schemas. Accommodation involves modifying existing schemata so that they match conflicting information. When the child reaches what Piaget calls equilibrium, assimilation and accommodation have occurred to create cognitive growth or learning (Wadsworth, 2004).

The conceptual analogies were developed to enact these processes and were used to challenge existing student conceptions of the nature of history and historical evidence. Each of these was introduced by a trigger question and followed by reflective discourse designed to elicit current conceptions and stimulate critical thinking and alternative perspectives. Table 6.2 gives a description of each analogy, the target concept it aimed to address, the ways in which the analogy and the target concept were related to each other and purpose of the analogy as part of the HLT.

The order of the conceptual analogies was consciously chosen to expose the children to increasingly complex conceptualisations of history. The objective was to prompt them to reflect on their own particular stance in relation to the trigger

questions. It was hypothesised that beginning with familiar scenarios such as a schoolyard fight (analogy adapted from the Stanford History Education Group website) would strengthen the children’s critical engagement before moving on to more complex historical concepts. The efficacy of the interventions were assessed in two ways: firstly, by assessing if the conjectures I made when devising the HLTs were confirmed (full HLTs can be found in Appendices K, L and M), and secondly, by an analysis of student engagement with the activities.

Table 6. 2: Overview of conceptual analogies

Analogy	Target	Analysis of relationships	Purpose
The Fight Principal tries to establish what happened during a fight	The nature of historical evidence	Historians, in trying to figure out what happened in the past, do the same work. Just like with the principal, there’s no way to actually go back in time to witness it. All that historians have to work with is the remaining evidence. That evidence can range from people’s stories (which may be different) to physical artefacts.	Introduces students to the interpretative nature of history
Autobiography Children recount an incident and search for evidence to back it up.	Historical significance	What one person remembered about the incident may be very different to what another person remembered yet both are correct. Sometimes that can be down to what one person considers as significant. Significance is very important in history and just like you collected evidence to prove what happened, a variety of evidence can be used to tell us about historical events too. The event is now in the past because it has happened. When we described what happened, there were many things we left out. We cannot capture every thought, movement, feeling that happened, to do so would be impossible. Therefore, history cannot be just the past, there’s too much there. It a selection of significant events from the past.	Children explore how history is not simply ‘the past’ but is a study of the past based on available evidence
The Sourcerer’s Apprentice Children watch clip from Fantasia and discuss Mickey Mouse’ role in casting the spell	Using a sourcing heuristic	In the Disney cartoon Fantasia, Mickey Mouse is the sorcerer’s apprentice. His job is to assist the sorcerer. The sorcerer uses spells to weave his magic but Mickey is only learning and makes many mistakes. Historians use special strategies which allow them to analyse historical evidence. We can use ICEACT as our sourcerer’s apprentice to help us read historical sources.	Children are introduced to a sourcing heuristic and how to apply it to reading historical evidence
The Argument Clinic Children watch clip The Argument Clinic	Identifying the features of an argument	In the Monty Python clip, The Argument Clinic, the man is looking to pay for an argument but instead, the employee simply contradicts everything he says. Historical claims are like good arguments; they need to have evidence to back them up.	Allows children to identify the criteria needed for a historical argument

DBR Teaching Experiments generate large amounts of data and due to space constraints, a brief overview of the intervention activities is provided in Table 6.3, summarising the main findings of HLT1. This is followed by a detailed account of the modifications which led to the formulation of HLT2 which was used in Cycle 2.

Table 6. 3: Overview of the findings from Cycle 1 of HLT1

Topic	Cycle 1: Main findings
<p>Multiple Perspectives</p> <p>The Fight</p> <p>The Fighting Vikings</p>	<p>The students had no difficulties in identifying possible witnesses to the event and considered issues of conflicting stories and reliability. From the discussion on how the incident relates to the subject of history, it was apparent that three of the children still found it difficult to reconcile the idea of conflicting accounts and needed more support. The conjecture, that the children would connect the importance of ‘perspectives’ to the study of history was only partially successful. The cognitive disequilibrium required to shift their initial ideas was not strong enough for the children who displayed predominantly Absolutist tendencies in the LEUQ. However, it seemed to prompt higher levels of critical engagement from those with more Multiplist tendencies.</p> <p>Sammy, who had initially struggled with real life examples of multi-perspectivity, saw the plausibility of multiple perspectives through the analogy of the fight. He applied this thinking to the use of actual historical sources effectively but still resorted to his initial ideas when asked to specifically relate this to the study of history. Maggioni, VanSledright and Alexander (2009) observed similar patterns in their work with third level students and refer to this shifting back and forth as ‘epistemic wobbling’. This may indicate that shift from an Absolutist position may take a series of steps to achieve for some students. This in itself is noteworthy as it indicates that students do in fact hold domain-specific epistemic beliefs and that these can differ when it comes to their own everyday thinking.</p> <p>Furthermore, the analysis indicates that conversations around issues such as multiple perspectives rather than being beyond primary children’s thinking, simply do not happen enough in primary classrooms. Once such conceptual ideas were articulated, it appears to have triggered a deeper response, especially, but not exclusively, from those children with initial Multiplist leanings</p>
<p>Significance</p> <p>Auto-biography</p> <p>The World’s Greatest</p>	<p>This task proved problematic, the children had difficulty selecting events and spent a lot of time on artwork for the booklet. This activity and the following one took so long to complete and involved so much work at home in finding a willing adult to corroborate the story, that it was decided to redesign the activity.</p> <p>Articulating current conceptions of history appeared to play a key part in instigating the process of conceptual change for some students. This is important as it indicates the importance of meaningful dialogue in the classroom.</p> <p>While the children made some connections between the activity and how it related to history, the analogy was not strong enough or fully developed and some children failed to make the connection between the past as an event and the past as an account of an event.</p> <p>The activity was hampered by the fact that the children were unfamiliar with most of the names. It was decided to change the focus of the exercise by using a list of Ireland’s greatest. It became apparent during the intervention that the selection process needed to be modelled and the trajectory was modified during the cycle by deliberating on each name and asking specific questions relating to their significance. This activity was redesigned to allow children choose their own significant people and a ranking for significance scale was developed.</p>

<p>Using Evidence</p> <p>The Sourcerer's Apprentice</p> <p>The Woman on the Bus</p>	<p>The heuristic was explained and modelled to the children and most of them referred back to the King Rufus task and acknowledged, that they had completely ignored exploring the provenance of the sources. This was seen by the researcher as a breakthrough as the children were internalising a new way of looking at historical evidence. The conjecture that the children would successfully use ICEACT to explore a historical photograph was also successful. Though they engaged well with the acronym ICEACT, concretising the relationship between the analogy and the target concept may have yielded better results.</p> <p>This activity was successful, but as identified in the analysis, there were a number of issues around children's beliefs about images raised. This included a belief in the objectivity of images based upon the idea that 'the camera never lies.' It was decided to build up towards the sourcing heuristic with a few non-history examples to address these issues and to prime the students for using the sourcing heuristic independently.</p>
<p>Argumentation</p> <p>What is an argument? The argument clinic</p> <p>How do we know the world is round? The Greatest Class of All</p> <p>Why did Titanic Sink?</p>	<p>As conjectured, all of the children agreed that an argument was a fight or a shouting match between people and to win an argument, one must shout the loudest or the longest. "The Argument Clinic" was very popular among the students and the discussion which followed helped clarify the difference between contradiction and arguing. All the children were able to identify that an argument needs to be backed up by a series of facts or statements.</p> <p>Both this lesson and The Greatest Class lesson went as predicted and the children put together an argument to prove the world is round by identifying a series of connected claims. The Greatest Class activity allowed the children to practice constructing an argument even further. In both activities, the children successfully constructed an argument by identifying a series of connected claims</p> <p>The children sorted these cards in order of significance but found difficulty with some of the vocabulary which needed to be explained. They began to discuss each of the cards in earnest and drew on the big ideas encountered in previous lessons (e.g., sources, dates, reliability and historical argument). Two of the children used the sourcing heuristic without prompting. Plausible and sound arguments were created and these were grounded in the evidence available.</p>

6.2.1 Modifications to HLT1. The grid in Table 6.4 summarises the results from the first round of analysis. The first row identifies the task. The number 1 represents the HLT relating to multiple perspectives, the number 2 represents the HLT relating to significance, the number 3 identifies the HLT related to using evidence and the number 4 relates to the HLT concerned with historical argumentation. Each letter in the grid row identifies the conjecture related to the activity. The second row indicates if the conjecture for the activity was confirmed or not and the third row provides the initials of each individual activity. To illustrate this process, the following example is provided: conjecture 2F stated that the children would be able to "identify why different personalities were chosen" in the activity "The World's Greatest" Sammy argued for "the man that invented the printing press" because "I did a project on him."

As can be seen from Table 6.4, the majority of the conjectures made about the children’s responses to the activities designed were confirmed. The cells shaded in grey were subject to modifications before the next cycle as they proved problematic and required revision. The problematic areas highlighted in Table 6.4 are discussed in the following section (A full breakdown of the conjectures from Cycle 3 and whether these were achieved is given in Appendix M). As identified in Table 6.4, a number of the conjectures were not realised during the first cycle. This resulted in modifications to the original HLT. The most notable of these was the restructuring of the Auto-biography unit and the development of additional activities on multiple perspectives and using images. The following section outlines the main changes that were made to the HLT.

Table 6. 4: Confirmation of conjectures in Cycle 1

HLT Cycle 1																							
1a	1b	1c	1d	1e	2a	2b	2c	2d	2e	2f	2g	3a	3b	3c	3d	3e	4a	4b	4c	4d	4e	4f	4g
-	+	+	+	+	+	-	-	-	+	-	+	+	+	+	+	-	+	+	-	+	+	-	+
TF	TF	TF	TF V	TF V	AB	AB	AB	AB	T W G	T W G	T W G	TS A	TS A	W OT B	W OT B	W OT B	AC	AC	GC O A	T WI R	TT	TT	TT

Though the children engaged with the concept of multiple perspectives, the majority found it difficult to relate this to the study of history. Based on the discussion on how the fight incident relates to the subject of history, it became apparent that three of the children still found it difficult to reconcile the idea of conflicting accounts and needed more activities to make the link between multiple accounts and perspective. This highlighted a weakness in the Conceptual Change Model. The first unit was expanded to include additional conceptual analogies. It was conjectured that more exposure to the concept, and more explicit discussions around the relationship between the analogy and the concept it targeted, would provide support in making the conceptual connection particularly to those with strong Absolutist tendencies. Similarly, the second unit on historical significance required modification as many of the children in the group failed to connect the idea of the history as an account of the past and its dependence on concepts such as significance and evidence. The format of the Autobiography activity itself was problematic in that it required children to find a willing member at home to corroborate (or not) their own version of an event in their past (see Table 6.5 for details).

Table 6. 5: Problematic conjectures

Lesson	Conjecture	Result
The Fight		
Conjecture 1a:	Children recognise there are multiple viewpoints of an event.	Four agree with Sammy and two don't.
Conjecture 1c:	Children equate detective work to historical analysis.	S, R and S firm on the idea that there is only one version of events –might need more activities around this.
Auto-biography		
Conjecture 2b:	Children note and explain differences	The activity needs re-designing as a whole, perhaps a shared classroom experience?
Conjecture 2c:	Children identify suitable evidence	
Conjecture 2d:	Children see that historians use evidence to back up claims	
The World's Greatest		
Conjecture 2f:	Children can identify why different personalities were chosen	Dominant voices – discuss criteria first
Conjecture 2g:	Children relate significance to the selection of events in history	Needs restructuring. Rating scale?
The Woman on the Bus		
Conjecture 3d:	Students use ICEACT to explore a Rosa's account	Some elements used but not all
Conjecture 3e:	Children a) find and b) explain discrepancies in the accounts	Only one student spotted the discrepancy between the dates. Perhaps build up with a few non-history examples?
The Greatest Class of All		
Conjecture 4c:	Children sort the cards according to whether they support the claim or not	The instructions for the activity were rewritten to clarify. Still some uncertainty on claims and evidence
Titanic		
Conjecture 4f:	Students rearrange cards to answer the second question	Activity is too long, too much to do - shorten
Conjecture 4g:	A) Students explain the importance of evidence B) Students see that the questions a historian asks shapes their interpretation	No argument constructed and only one student saw importance of the question

The conjecture that the children would note the differences in their selection of events, and could explain why these existed, was achieved by the only child who completed the activity at home. This activity was replaced with using a shared classroom experience (an outing, a lunch break) to allow children to engage with the activity in class. This, it was conjectured, would also allow them to see differences in individual accounts and also the fact that every experience they encountered during break-time was not recorded. It was conjectured that these activities would begin to break down the idea that history is a mirror copy of the past.

It also became apparent that the children found it difficult to select criteria for ranking in order of significance and so a rating scale (modelled on The Critical

Thinking Consortium, 2014) was developed for the next iteration (the scale of significance can be found in Appendix O). The unit on historical evidence worked well but I felt the analogy could have been developed better. While the children enjoyed the Disney clip Fantasia, they were still treating images and accounts as sources of information and a number of additional beliefs (such as the camera doesn't lie) were highlighted during the activities. I decided to use additional conceptual analogies to challenge these ideas before introducing the sourcing heuristic.

6.2.2 Modifications to the Conceptual Change Model. During the analysis of the data from the teaching interventions, it became apparent that the original conceptual change model (Stepans, 1996) was not having the desired effect in creating cognitive disequilibrium. A return to the data identified the points where children were making breakthroughs. This was coded in NVivo across all the cycles. Table 6. 6 highlights the children's engagement with and response to the conceptual analogies used during the teaching interventions and this process led to the development of a new model based on analogies which will be discussed further in Chapter Seven.

The conjecture that the use of non-historical analogies would work to both expose children's epistemic reasoning and serve as a springboard for deeper historical engagement proved correct. The everyday example of a fight at break-time allowed children to engage in high-level critical thinking when exploring the issue. In light of this success, I decided to reframe the conceptual change model and to include a wider range of non-historical examples to further cement conceptual ideas.

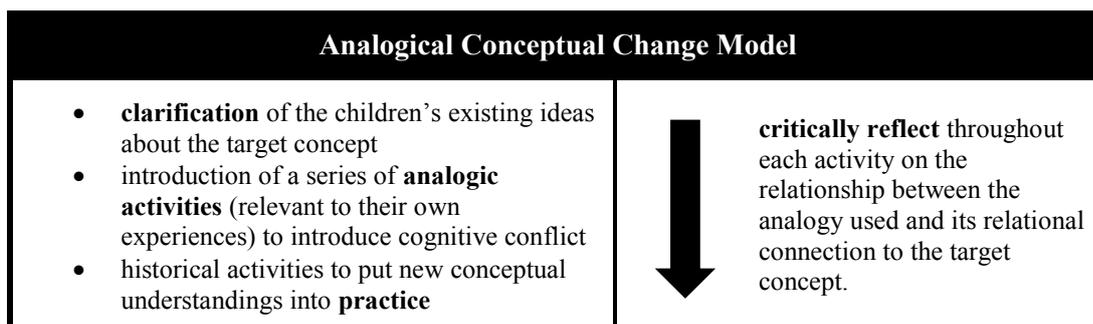
Table 6. 6: Coding for use of analogies

Stages of conceptual change	Description of process (in bold) and examples (in italics)	References in transcripts
Changes to beliefs	Changes in epistemic beliefs with reference to analogies used <i>Two people, same event, like we did with the lunchtime fight, if someone was watching from this angle and someone was watching from another angle then they see and one might say 'she kicked her out of nowhere' and the other might say 'no, she didn't she was making faces' different angles, different perspectives</i>	70
Children's own analogies	Analogies created by children to explain concepts <i>A historian is like a barrister more than a detective. History is a mystery so historians are mystorians.</i>	4
Later references	Children referring to analogies post-activity <i>Ah but remember the drawings we did? They were all different cos we were using our imaginations. You have to be careful.</i>	4

Stages of conceptual change	Description of process (in bold) and examples (in italics)	References in transcripts
Step 1: Explication	Identifying children's current beliefs about aspects of history <i>Nah, history is history, it doesn't change so you just have what happened, you know? ... If my brother robbed my sweets, he robbed them, you can't turn around and say he didn't cos he did.</i>	15
Step 2: Working with the analogy	Children's interactions during the use of analogy <i>That's actually a bit scary, I could see Good but when Ruadh said "Evil, I see Evil" then I could see it</i>	37
Step 3: Relate to history	Connecting to history specific tasks <i>You can see two things differently, none of us agreed all at once, I suppose history could be like that if you were looking at evidence</i>	14
Step 4: Use of analogy	Using the analogy in history specific task <i>Corroboration, how can we do that? The text? The story? Do we use ICEACT on the story? ICEACT, I am an ICEACTOR!!! Here's a description from her autobiography about that day.</i>	11
Step 5: Identifying relationships between analogy and history	Describing the connection between the analogy and the concept <i>It's a bit like the Lunch time fight, there can be different ways of looking at it. The evidence, you could read it and it would mean one thing and I could read it and it might mean something else. We need to look at where it came from and who wrote it, like the principal, historians do the exact same thing,</i>	16
Step 6: Concretising the relationship	Discussing how the analogy does and does not connect <i>Sometimes they use wrong photos online to go with stories just to make them more dramatic, that's why it is always important to check the date.</i> When students refer to activities using analogies during the interventions <i>Remember about the optical illusions? We all saw different things. I don't know why, but, I don't know, maybe one person knows what the Vikings are really like, or he thinks he does. Ok, we need to think about this, if you were an Irish monk, what would you think?</i>	10

Of note throughout the intervention was the power of peer-discussion. On a number of occasions, the children themselves problematised and resolved a variety of conflicting ideas in a manner that resonated well with their fellow classmates. Following the retrospective analysis of the HLT from the first cycle, I also decided to incorporate the fourth step of the Conceptual Change Model into the discussions at the end of each activity rather than at the end of each unit as originally planned. The modified ACCM is outlined in Figure 6.1.

Figure 6. 1: Analogical Conceptual Change Model (Cycle 1



6.3 Teaching interventions Cycles 2 and 3

The following section reports on Cycle 2 and Cycle 3 of the teaching interventions. The section begins with an overview of the modifications made to the HLTs as a result of the analysis of Cycle 1 and then Cycle 2. This is followed by an outline of the additional conceptual analogies used in Cycle 2 and Cycle 3.

Following this is a detailed account of the children’s interactions with the activities from the HLTs. This account is organised around the four HLTs: multiperspectivity, significance, using evidence and argumentation.

6.3.1 Modifications made to HLT2 and HLT3. The HLTs, informed by the remarks and findings from the first cycle, were adjusted. This led to the creation of HLT2 which was then used with a fourth class of 23 children. The substantial modifications made to the original HLT were discussed already in Section 6.2.1. HLT2 was also subjected to the same analysis and the subsequent modifications led to the development of HLT3 which was used with another fourth class of 18 children during Cycle 3. The only additional activity added to the HLT for Cycle 3 is marked in bold in Table 6.7. This was included as an additional activity as six students from Cycle 2 had difficulties connecting the idea of multiple perspectives to the study of history and so the Darla activity was added to the first unit of HLT3. A number of smaller modifications were made to the existing lessons. For example, the Titanic activity was shortened to one question and argumentative vocabulary was added to Unit.

Table 6. 7: Summary of HLT 2 and 3

Hypothetical Learning Trajectory 2 & 3			
Topic	Learning goals	Activity	Time
Multiple Perspectives	To explore multiple accounts of an event	One Way or Another	5 mins
		Where’s the Chair?	10 mins
	To understand how multiple accounts are formed	The Fight	30 mins
		Do you see what I see?	15 mins
		Darla (HLT3)	15 mins
	The Fighting Vikings	15 mins	
Historical Significance	To explore how recollections of an event can change	Snapshot in Time	20 mins
		Big Fish Little Fish	20 mins
	To explore historical significance	The World’s Greatest	30 mins
		Ireland’s Greatest	30 mins
	To explore historical perspectives		

Images as Evidence	To understand that an image does not always present an exact copy of the past	Look twice	10 mins
		Listen and draw	20 mins
		Shall I compare thee?	15 mins
	Using a sourcing heuristic to analyse images and documents	The Sourcerer's Apprentice	30 mins
		The Woman on the Bus	20 mins
Sustain your Claim	To explore the components of a historical argument	What is an argument?	10 mins
		The argument clinic	15 mins
	To support historical claims with evidence	How do we know the world is round?	20 mins
		The Greatest Class of All	20 mins
		Why did Titanic Sink?	40 mins
(actual lessons in Appendices L & M)			

6.3.2 Modifications made to the conceptual analogies. The conceptual analogies were developed to challenge existing student conceptions of the nature of history and historical evidence and were each preceded by a trigger question and followed by reflective discourse designed to elicit current conceptions and stimulate critical thinking and alternative perspectives. Table 6.8 gives an overview of the analogy, the target concept it aims to address, the ways in which the analogy and the target concept are related and purpose of the analogy as part of the HLT.

As can be seen in Table 6.8, a number of additional conceptual analogies were built into the HLTs for Cycle 2 and Cycle 3. By using familiar knowledge or situations, the analogies effectively spanned the conceptual bridge between the known and the unknown. This was particularly the case when the analogy shared a functional relationship to the target concept, The Fight analogy being a prime example of this. In response to the initial success of The Fight, new analogies were developed and added to the HLTs. The analogies designed for this study were developed to address student preconceptions around four key areas that were identified in the pre-intervention analysis of the semi-structured interview and historical enquiries. These analogies were also central to the further development of the Analogical Conceptual Change Model. To illustrate how this model effectively underpinned the HLTs for Cycle 2 and Cycle 3, the following section is organised around its implementation across the four units. As Cycle 2 and Cycle 3 were quite similar in structure, content and participant size, they are reported on simultaneously and with specific emphasis on how they impacted on the children's epistemic bottlenecks.

Table 6. 8: Conceptual analogies developed for Cycle 2 & Cycle 3

Analogy	Target	Analysis of relationships	Purpose of analogy
<p>Where's The Chair? Children listen to a list of types of seats and then write the list.</p>	Multiple accounts	Most people include the word <i>chair</i> in their list but it was not on the original list. History is about interpretation and there are many interpretations of historical events. Sometimes stories and memories can change over time and sometimes people can interpret the same events differently.	To explore how stories and memories of an event can change over time which can lead to multiple accounts of the same event
<p>The Fight: Principal tries to establish what happened during a fight</p>	The nature of historical evidence	Historians, in trying to figure out what happened in the past, do the same work. Just like with the principal, there's no way to actually go back in time to witness it. All that historians have to work with is the remaining evidence.	Introduces students to the interpretative nature of history
<p>Do You See What I See? Children look at a range of optical illusions and note how there are many interpretations in how these are perceived.</p>	Multiple perspectives	Just like the optical illusions, when we study history, we can view historical events, personalities, developments, cultures and societies from a range of different perspectives. We need to question a piece of evidence by asking how people's perspectives have shaped their story. This does not mean that a person is lying but could mean that he or she has a different perspective. They still might have something valuable to contribute to our understanding of what happened in the past	Students can see how the various images can be interpreted in different ways, breaking down the idea of one fixed account of history.
<p>Snapshot in Time: children recount how they spent the last lunchtime and search for evidence to back it up.</p>	Historical significance	What one person remembered about the lunch break may be very different to what another person remembered yet both are correct, sometimes that can be down to what one person considers as significant. Significance is very important in history and just like you collected evidence to prove what happened, a variety of evidence can be used to tell us about the past in history too.	Children explore how history is not simply <i>the past</i> but is a study of the past based on available evidence
<p>Big Fish, Little Fish: children are introduced to a ranking for significance scale</p>	Historical significance	Historical significance is a bit like big fish and little fish swimming in a pond. Sometimes, we focus on the big fish (big events) and sometimes we focus on the little fish (smaller events). And sometimes, little fish can become big fish depending on the circumstances. In history, we can use significance to sort the big fish from the little fish.	Introduces the children to historical significance through using a rating scale
<p>Look Twice: Children examine a series of staged photographs and discuss</p>	Using images as evidence	Sometimes, the camera can lie, particularly if images are staged just as these photographs were. When studying history, we need to handle images with care. We need to think about the audience and purpose for which they were created.	Sometimes, images do not tell the whole story. Photos and images are not always a complete account
<p>Listen and Draw: children listen to an</p>	Sourcing evidence	Artists, in particular, rely on both imagination and evidence to reconstruct an impression of what happened. Just	Introduces children to the idea that sources contain more than factual

eyewitness account of an event and then draw what they imagine.		like the images we produced based on the same account, they choose what to draw and what to leave out. When we look at any image, we need to ask questions such as: who painted this? When was it painted? Was the artist there at that time?	information in that each source has a context and that context shapes how it is interpreted
The Sourcerer's Apprentice	Using a sourcing heuristic	In the Disney cartoon Fantasia, Mickey Mouse is the sorcerer's apprentice. His job is to assist the sorcerer. In history, we can use ICEACT as our sourcerer's apprentice to help us read historical sources.	Introduces children to a sourcing heuristic: Identify, Contextualise, Explore, Analyse, Corroborate, Take it Further
The Argument Clinic	Identifying the features of an argument	In the Monty Python clip, The Argument Clinic, the man is looking to pay for an argument but instead, the employee simply contradicts everything he says. Historical claims, just like arguments, need to have evidence to back them up.	Explores how an argument is constructed

The children were recorded whilst engaging with the activities and were also provided with history learning logs (see Appendix S) immediately after each activity which allowed for some measure of self-reflection on their understanding of history. This also allowed me to identify which analogies and features of the interventions were having a positive impact as the children were asked to reflect specifically whether the activities had challenged their view of history or not. The data from the reflective learning logs were entered as image files into NVIVO and also analysed using Fereday and Muir-Cochrane's (2006) Hybrid Thematic Approach (as discussed in Chapter Four, Section 4.6.3). The following section is organised under the headings: multiple perspectives, historical significance, using evidence and historical argumentation.

6.3.3 Multiple perspectives. Multiperspectivity, according to Stradling (2003), is a term that is often used but rarely defined. Describing it as a "strategy of understanding" (p. 13), he adds that it is the process by which an individual takes into account another's perspective in addition to their own. The reference "in addition to one's own" reflects an acknowledgement that all individuals have a particular standpoint or perspective that has been mediated through a process of cultural biases and experiences; thus Stradling defines it as not just a strategy but also a predisposition. Multiperspectivity requires an acknowledgement that there are multiple ways of viewing or reading the world and people's experiences of it. It also requires a sense of empathy and a willingness to try to see the world as someone else does. As Barton and Levstik (2008) point out, there is a vast difference between historical empathy and sympathy. Endacott and Brooks define empathy as "the

process of students' cognitive and affective engagement with historical figures to better understand and contextualize their lived experiences, decisions, or actions. Historical empathy involves understanding how people from the past thought, felt, made decisions, acted, and faced consequences within a specific historical and social context" (2013, p. 42). Central to the development of a sense of historical empathy is the ability to think in terms of multiple perspectives.

Distinguishing between the multitude of perspectives relating to the past is a conceptually complex undertaking that requires distinctions to be made between the historical actor and the evidence itself. This requires a consideration of the stances, values and attitudes of individuals from the past, the perspectives of those who interpreted them at the time, and also those who wrote about them later. The activities designed for this unit were designed to allow the children to begin to navigate this complexity and they begin with a focus on the variance of individual perspectives at a personal level and then move towards the variance in interpretation of sources at a historical level due to differing experiences of an event.

The opening activity drew on the first step of the newly modified Conceptual Change Model in that children articulated their own beliefs about the question "are two different accounts of the same event possible if no one is lying?" and as conjectured, a large number in both cycles believed that there cannot be two different accounts of the same event. As Daire (Cycle 2) succinctly put it "well, one would be right and one would be wrong" and when asked could stories change over time, he was emphatic that they could not. This stance represented the majority of the children in both cycles. The responses to this introductory activity were as predicted. The children were able to give a variety of reasons on how stories and memories of an event can or cannot change and all of these corresponded directly with the conjectured responses which ranged from "no, facts don't change" to "yes, sometimes we remember things differently." Those at the far end of the spectrum included Ruadh, Annie and Gavin (Cycle 2) who argued that multiple accounts were, in fact, possible and cited fairy and folk tales and the children's game of Chinese Whispers as examples. Rónan (Cycle 3) also argued for the existence of multiple accounts of the same event and used people's perspectives as an explanation. Danka, influenced by Rónan's comment, concurred "yes Rónan, I see, ok, so you could have two journalists, one on that side of the parade and one on the other, so they have different perspectives."

The second conjecture was that children would hold the belief that there can only be one version of history. This is an issue that was strongly indicated in the interviews conducted prior the interventions. As conjectured, the vast majority of the children indicated a belief that history is fixed and expressed an everyday understanding that there is only one way in which events can happen and, therefore, only one way in which they can be reported. Caoimhe (Cycle 3) displayed how deeply the epistemic bottleneck of equating history with the past was entrenched in her thinking and argued (when talking about history) “if my brother robbed my sweets, he robbed them, you can’t turn around and say he didn’t cos he did – and he does that! He says he doesn’t but he’s lying.” For Caoimhe, history and the past were both the same thing so if events in her immediate past could not have more than one version, then neither could history. Brad agreed and stated, “Nah, history is history, it doesn’t change, so you just have what happened, you know?”

However, not all of the children held such ideas and some rejected this from the beginning. Róise (Cycle 2), possibly drawing on her experience of the historical enquiries argued, “events *can* change, right, listen, you hear one thing and all historians believe it, but then you hear something else and it makes you think ‘oh that’s wrong, what have I done!’” and Rónan (Cycle 3) made the same argument but in a more tentative manner: “But I’m not sure, maybe? Not that it changes but you could have different versions? Like 1916? Or World War 2, like if you were a Hitler supporter?” In this statement, Rónan also introduced into the equation his acknowledgement of the existence of historical bias. Gavin (Cycle 2) saw that the unearthing of “new evidence” could change interpretations of the past. Rooted in these children’s explanations was a realisation that history was, in fact, more than simply recounting the past and that interpretation and evidence played key roles in its construction.

As the children in both cycles discussed these ideas, a number of children began to critically reflect on the question. Perhaps, as was found in Cycle 1, simply asking certain questions causes children to re-evaluate their initial epistemic conceptions? The discussion from Cycle 3 below illustrates the reversal of Sarah and Brad’s initial belief that history cannot change, which may have been influenced by the conversation itself:

Sarah: The past can't change so the story can't really change.

Brad: It can't change.

Caoimhín: Yeah like but if you find new evidence then that will change the story.

- Sarah: Well yeah, I suppose.
- Brad: Your memories can change, I think.
- Rónan: Yes, say somebody told you a joke and you didn't get it until later on, then it went from being something stupid to something funny.
- Danka: Memories can't technically change but maybe the vision of the memory can change because you have forgotten over time, but the memory is still the same no matter what.
- Ivan: That is what it is like, basically the account of the story could change but the actual story wasn't changed, how you retell it.

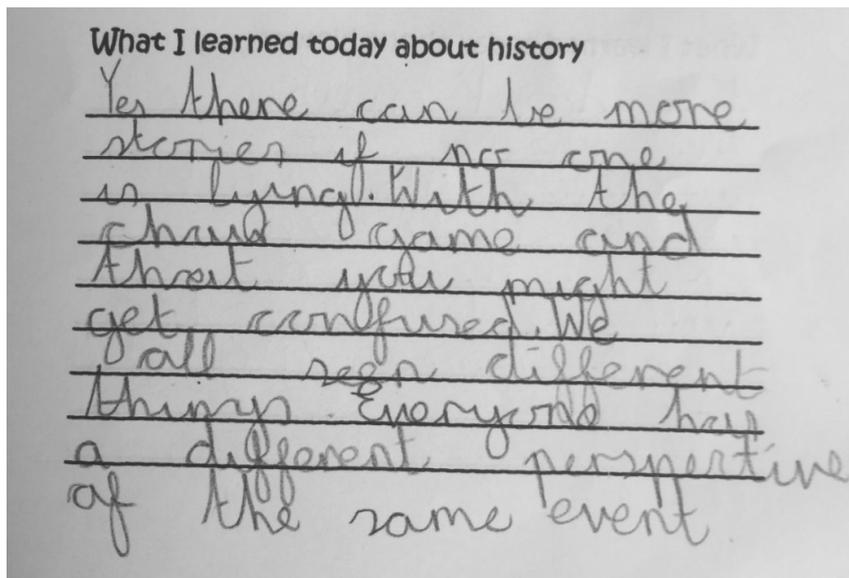
Though embryonic at this stage, some of the ideas the children were engaging with showed that this discussion by itself was unlocking new ways of thinking for some but it was also solidifying existing ways of thinking for others. Of interest here was that the majority of the children who were leading these conversations, in both cycles, scored as either Evaluativists or Multiplists (Gavin, Róise, Cycle 2) or Multiplists (Ivan, Danka and Rónan) in the LEUQ. Gavin scored as pure Evaluativist and Ivan registered as pure Multiplist. Danka and Rónan registered as midway between Multiplist and Evaluativist.

A series of conceptual analogies formed the second step of the modified version of the Conceptual Change Model in an effort to introduce cognitive conflict. The “Where’s the Chair?” conceptual analogy required the children to recall and write down as many of the words called from a list as they could remember. The objective of this new task to the trajectory was to allow children to experience a situation where individuals recalled different accounts of the same event. Children who wrote down the word “chair” in their list were asked to stand up and the majority in both classes did. When it was explained that “chair” was never called out there was a huge outcry from the standing children. The recording had to be played out again to assure them that “chair” was not on the list. When asked why it was included on their list, both Jenna and Dathaí (Cycle 2) referred to the fact that all the other words were types of seats with Jenna exclaiming, “I can’t believe that, my mind played a trick on me. I really thought it was called out.” This was exactly the type of cognitive disequilibrium that was missing from the first cycle and this can be shown by how the children connected this and the later activity to the practice of doing history.

When asked how this related to the study of history, Ailbhe remarked, “The actual event didn’t change, you didn’t say “chair” but how we remembered it did

change” and Danka (Cycle 3) echoing Ailbhe’s point and said, “Well it’s important that when we are looking at history we need to check when it was created... cos if it was someone’s memory from years ago and they were only talking about it now, the memory might have changed, like ours did in a few seconds.” As can be seen from Danka’s history journal entry in Photograph 6.1, she understood how the concept of multiple perspectives played a part in the construction of historical narratives.

Photograph 6. 1: Danka’s history journal



Gavin (Cycle 2), when reflecting on his experience of the activity, summed up how the previous analogies attended to the issue of multiple perspectives and in particular how these play a part in the discipline of history, “I suppose we need to remember that we don’t all remember things the same way and we don’t all history things the same way.” Although Gavin had already displayed a conceptual understanding of multiple perspectives in the interviews and when articulating his thoughts on multiple accounts at the start, the conceptual analogies seemed to confirm his thinking for him.

The Fight analogy resonated on a much deeper level with the children from both of these cycles, especially in terms of relating it to the subject of history. From the discussion afterwards, it was apparent that the children had a much clearer knowledge about how a historian, just the same as the principal, needs to use a range of sources and needs to evaluate those sources in order to reconstruct events from the past. When asked how the activity related to the study of history, the vast majority of

the children were able to connect the base analogy with the target concept of multiple perspectives as the discussion from Cycle 2 shows:

Dathaí: I think they tie in together because history is kind of like detective work.

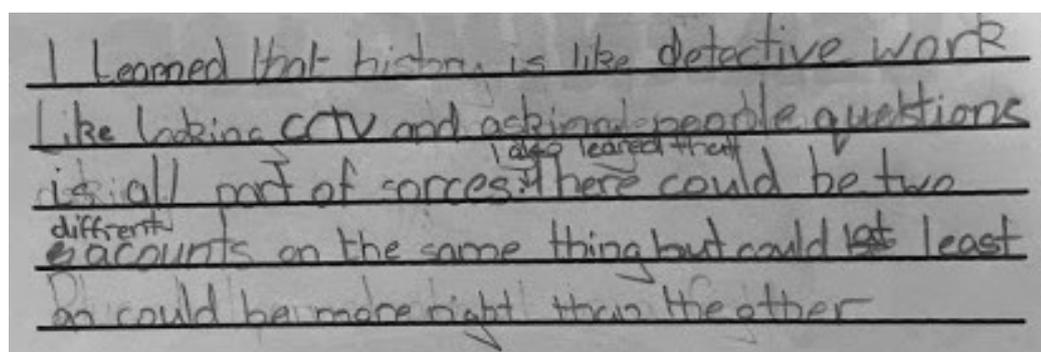
Caoimhe: It's about the perspective.

Gavin: Cos that can happen in history, you have to look at who is writing it and what they are saying.

The children from Cycle 3 also made the relevant relational connections between the analogy of the lunchtime fight and the role of the historian in constructing an account of the past. In both cycles, children referred to the historian as being very like a detective trying to piece together what happened. Danka added, “By being a history detective, like what we were doing with the fight, we got all the evidence we could find and we looked at it and like Rónan said, we looked at the relationship.”

In the excerpt taken from Ailbhe's history journal (Cycle 2), she demonstrates characteristics of Evaluativist thinking in relation to the activity (Photograph 6.2). Comparing the work of the historian to that of a detective, she also acknowledges the existence of multiple accounts of an event but, additionally, argues that one account may be more correct than the other.

Photograph 6. 2: Ailbhe's history journal



Some children went even further, Gavin (Cycle 2), for example, had begun to see that while many aspects of the past are unknowable, there are methods or criteria that the historian can use to reconstruct the past and that the reconstruction is contingent on evidence and can change as a result of the discovery of new evidence:

CníC: Do you think the principal will ever get the final story of what happened?

Gavin: No.

CníC: Why not?

Gavin: Because the principal doesn't know exactly what happened but he can put it together and use all the stories.

The "Do You See What I See?" conceptual analogy was aimed at addressing the issue of multiple perspectives in a non-historical way to further challenge the belief that we all see things the in the same manner. The children had great fun calling out their initial perceptions of a range of optical illusion images and were both thrilled and delighted when they heard other responses; though some were a bit shocked when their initial perception of the image dissolved and they were faced with a new image. Gavin, a confident and bright student, found this somewhat disconcerting and exclaimed, "Oh God, yeah, oh my God, that's so freaky, the old woman just cut out and then I saw the young woman and then I could move between the two of them." Daire also had a similar response with the Good/Evil image and remarked, "That's actually a bit scary, I could see Good but when Bethany said "Evil, I see Evil" then I could see it too."

When asked how this could relate to studying history, the children were more than able to formulate responses and drew on previous activities to explain how, as this conversation illustrates:

Dathaí: We see different things; history has different perspectives.

CníC: What do you mean by different perspectives?

Dathaí: It's a bit like the lunchtime fight, there can be different ways of looking at it.

CníC: Looking at what?

Dathaí: The evidence, you could read it and it would mean one thing and I could read it and it might mean something else.

In the excerpt above, Dathaí referred back to the original analogy, that of the Lunchtime Fight, showing that the inclusion of this activity served to cement the concept of multiple perspectives. A small number of students, such as Daire, still found the conceptual leap too large to span as the conversation shows:

CníC: Do you see that Daire?

Daire: Yeah.

CníC: Do you understand how we're linking it with history?

Daire: Yeeeeepppp.

CníC: How? Tell me.

Daire: I can't really explain it but I understand it.

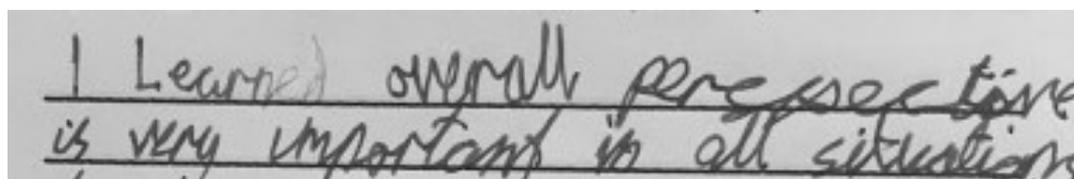
CníC: So why was I showing you these illusions?

Daire: To show, to show, can you come back to me?

Although Daire engaged enthusiastically with the activity and was one of the first to see different images contained within the originals, he, like six other children in the class, struggled to apply this to the study of history. As discussed earlier, to offset this in Cycle 3, an additional activity, “Darla” was built into the trajectory.

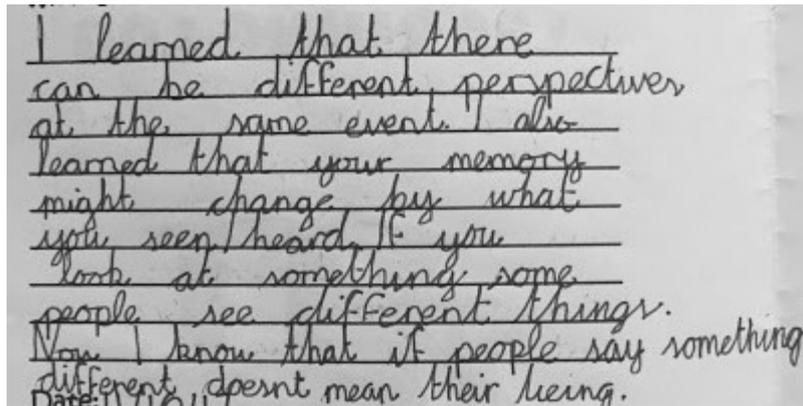
The children were shown a clip of Darla at the dentist from the Disney movie “Finding Nemo” (Stanton & Unkrich, 2003) and all agreed that “she is evil”. They were asked to watch the clip again, but to consider it just from Darla’s perspective and their interpretation changed. This activity was successful in allowing the children to see how people can experience an event differently. When asked to relate this to the study of history, they could easily discern that there are a variety of interpretations of the past. Nadia’s response in her history log for that day (Photograph 6.3) shows that she did indeed make the connection between multiple perspectives and studying the past but more interestingly, Nadia saw the importance of extending this to other situations.

Photograph 6. 3: Nadia’s history journal



This indicates that the conceptual shift the children experienced was not confined to the study of history but had implications for how they might orient themselves in the wider world. The same could be said of Eimear’s response to the activities. She also acknowledged the importance of recognising that people can view events from a variety of perspectives and that these perspectives shape our interpretations. Of interest here is that she related this to her own interactions with others. Her comment “Now I know that if people say something different doesn’t mean their lying” seems to indicate that she too was extending her new learning beyond the study of history (Photograph 6.4).

Photograph 6. 4: Eimear's history journal



The third step in the modified Conceptual Change Model allowed the children to apply new conceptual understandings to an enquiry grounded in historical sources. The “Fighting Vikings” provided the children with two conflicting accounts of the Vikings which allowed them to practise using the ideas they had encountered in the last few activities on actual historical sources. The activities prior to this one were consciously non-historical and aimed at breaking down children’s everyday conceptions about history, and the children, drawing on their experiences of previous activities, began to think of history in terms of being detectives.

As conjectured, all children verbalised the idea of differing perspectives, some to a much higher degree than others, but there were several instances where elements of historical thinking were evident in the transcripts. The children activated prior knowledge of the Vikings to help make sense of the evidence, they also began to contextualise and ask questions. The dialogue from Cycle 2 below is an example of an exchange between one group of children which demonstrates not only aspects of historical thinking but also how the previous lessons had begun to challenge Daire’s epistemic beliefs about historical evidence:

Freya: The Arab is a trader, he sees nice things, the monk is afraid, he knows what they can do. It’s about their perspectives

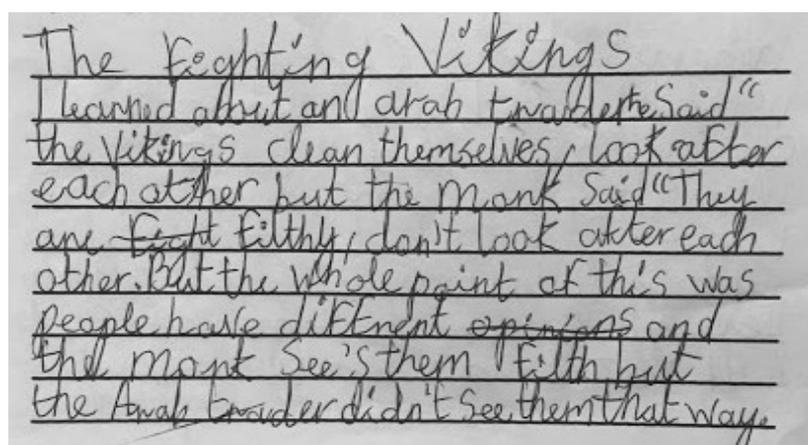
Daire: Remember about the optical illusions? We all saw different things. I don’t know why, but, I don’t know, maybe one person knows what the Vikings are really like, or he thinks he does. Ok, we need to think about this, if you were an Irish monk, what would you think?

Ruadh: They’d steal, they’d steal from your monastery and anyone left over, they’d be slaves. That’s why he’s afraid.

Daire: And your man Russell, he doesn't know how mean they can be, he thinks they are nice because he's only seen the nice things. Maybe they are a bit of both. A bit nice and a bit ... em... not nice?

The second conjecture relating to this activity was also confirmed in that the children were able to connect the lesson to the idea of sources in history. Arising from this, the children found it much easier to describe their own evolving perception of history as constructed from and built on evidence or sources.

Photograph 6. 5: Ryan's history journal



As can be seen in Ryan's response to the activity (Photograph 6.5), the differences in the accounts were grounded in the idea of differing experiences, and therefore, different perspectives. Although Ryan perhaps read too deeply into the Irish monk's short account, there was an understanding that perspective plays an important part in the reading of historical sources.

6.3.4 Historical significance. This unit began with the first step of the CCM and the children were asked "what is history?" and as conjectured, the vast majority described it as "the past". As this example shows, the children were adamant that history and the past were both the same thing and that every past event was history. This was an epistemic belief that was incredibly strong across all cycles:

CníC: How is history the past?

Daniel: Cos everything that happened is history

CníC: Everything?

Daniel: Yep, even what I'm saying now will be history

CníC: Ok so will someone read about this conversation in the future?

Gavin: No

CníC: Why not? It's history

In articulating their initial conceptions, the children were setting themselves up for the cognitive disequilibrium that happened later in the unit, a process which began with the question I purposely put to them in this excerpt to probe the firmness of the belief and from which a productive discussion on the content of history books, and who decides on content, emerged.

The second step in the CCM introduced cognitive conflict, the purpose of which was to break down the deeply held conviction that history and the past are the same. To do this, the “Snapshot” conceptual analogy, which had been heavily modified as a result of the retrospective analysis of Cycle 1 (see Section 6.2.1 of this chapter for further details) used a shared classroom experience (what they did during the lunch break) and this allowed children to compare their own versions of the same event. They were also asked to list any evidence they could think of that would back up their version of the break. As predicted, most children could identify where and why accounts differed and, drawing on the previous activities, they were able to identify the role perspective played in shaping their accounts. They were also asked to think about all the events they left out of their accounts. The discrepancies between their selection of facts highlighted the difference between history as an account of an event and the past as an event that has happened. This activity helped the children understand and acknowledge that their common-sense use of the word history was inconsistent with the disciplinary use of the word.

Following this was a discussion around the importance of significance in terms of the selection of material for historical study. This in itself was an interesting exercise as the term was unfamiliar to most children. Ruadh, for example, explained significance as meaning either husband or partner as her mother often called Ruadh’s dad “her significant other.” Evaluating historical significance is a complex undertaking and involves much more than deciding which events are of more importance than others. For the purposes of this activity, however, the concept of historical significance was used to begin breaking down the belief history and the past are the same. The analysis of the activities is focused on this aspect of historical significance.

Rónan: If history is simply the past, then that would mean that everything that ever happened in the whole world would be ...

Enda: ... history

Conor: ... and we would study it.

CníC: Yes, like today, my dog ate all her breakfast.

Sophie: That was in the past, but sorry Miss, I don't think that is going to make it into the history books.

CníC: Anyone know why?

Caoimhe Because it's not that interesting.

CníC: It is to me!

Callum Sorry Miss but it's just not significant.

Establishing a distinction between history and the past required a shift in conceptual understanding and the generation of a new conceptual map that allowed children to appreciate the complexity of the discipline. Many of the children made the connection and this provided a solid conceptual base for the subsequent activities. "Big Fish, Little Fish" was successful in cementing the idea of historical significance and the children understood the purpose of the conceptual analogy.

CníC: Ok we talked about significance, now this is what I call a scale of significance that can help us judge if something is significant or not.

Danka Oh big fish is significant stuff and little fish isn't. I get it (Cycle 3).

All were able, by the end, to identify issues of national, global, local and personal significance in the list given and were particularly amused by the "The day I ate tuna salad" example of an insignificant event which was used time and time again throughout the subsequent activities to refocus their investigations. For example, later during the Titanic activity, when sorting cards in order of significance, Ruadh (Cycle 2) remarked, "Yeah, but is that card not a bit of a tuna salad?" and all the children in the group understood exactly what she was trying to explain, that the fact was of no significance to the sinking of the Titanic but may be significant to another question. This activity allowed children to see significance not as something static but as a process, and that sometimes, events that are considered insignificant can, in retrospect, become important:

CníC Is there any way that that could become significant later?

Enda Yes, if you choked on it.

Rónan Or if it turns out you ate the last tuna in the world, then it might become globally significant.

Enda Or say Donald Trump choked on it, then it would be a celebration! That would be the global, the day Trump choked on tuna.

The second conjecture, that the children would successfully use the Ranking for Significance Scale was also confirmed and they correctly assigned labels to significant events. The discussion afterwards also allowed them to tease out the

complexities of historical significance and they began to discuss how significance can actually overlap – e.g., 1916 could be of local, national and global significance. They also began to add criteria independently without the teacher having to prompt them. For example, the invention of gunpowder was explained as significant because of the effect it had on future societies.

The “Ireland’s Greatest” activity utilised the third step in the modified CCM in that it allowed the children to apply their understanding of historical significance to historical events and the children negotiated the terms for this themselves. For example, Jenna suggested the group go with the majority but Ruadh argued that they had to have a set of reasons: “Let’s say Róise chose Kathleen Lynn and I chose Pádraig Pearse. I’d have to say stuff he’d done. I’d say he was in jail and got shot for Ireland but Róise might give better reasons and try to convince me. If she did, I’d go with that.” During their deliberations, many of the children gave valid reasons for their choice or dismissal of individuals as Ireland’s greatest.

Gavin: Roy Keane, he’s brilliant. He did great things for football and for Ireland.

Seoda: Who? Robbie Keane?

Gavin: No, Robbie Keane is brutal! Roy Keane should at least be number two.

Bethany: And what about Pádraig Pearse, he’s more important. He died for Ireland and all Roy Keane did was kick a football. You’re picking him cos you like football but I don’t think he’s important at all.

Róise: We need to judge them on the things they did. Like the musicians, they didn’t really do anything. They wrote songs, it’s not that significant.

The activity also allowed the children to see that issues of significance can vary according to the reasons given or even the person selecting them. The discussion following the activity developed the idea even further and saw the children move towards an understanding that significance can not only vary but can herald eras of great change:

Bethany: Some of the significant things had big changes.

Gavin: Yeah, like that thing that happened in America, you know when there were the two planes in New York? I forget the name.

CníC: 9/11?

Gavin: Yes, it led to big changes like aeroplane security, it takes ages now. And like World War II, it led to more peace in the world.

6.3.5 Using evidence. Drawing on the first step of the CCM, this unit began by asking “can the camera lie?” and the majority of the children were of the opinion that the camera is never wrong, that is unless the image has been photo-shopped! Many, but not all of the children, agreed that pictures or images are an accurate representation of an event. Katelyn explained that “when you take a photo it’s like a memory of where you were and what you were doing at the time.” Rónan argued that “a real photo is like a mirror; it flips the world. Like you can’t read writing in a photo it’s backwards so it’s not real reality is it?” Caoimhe, however, disagreed with Rónan and claimed, “I think it is, like if I take a photo at my birthday party, it shows what happened at that minute, even if it’s flipped.” Likewise, Caoimhín saw this type of evidence as an objective recording of reality and argued, “No, if it’s a CCTV camera they can’t edit it, it only sees what it sees it doesn’t change, what it sees is what happened.”

Having outlined their positions, the second step of the CCM employed a series of non-historical analogies that served to create cognitive disequilibrium between their initial conceptions and their experiences of the activities. This allowed the children to create a strong mental link between the analogies and exploring images from a historical perspective in later activities. The children enjoyed figuring out a series of “Look Twice” photos and explaining how they were made and this activity began to break down some of the initial ideas about photography and images. Jenna (Cycle 2) remarked, “Not everything is like it seems, you need to ask yourself questions about it.” Brad (Cycle 3), applying this to the study of historical images stated, “you can see what the past looks like, what happened then, but it’s not the full picture, you have to think about the WAY they took the picture, what THEY want you to think.”

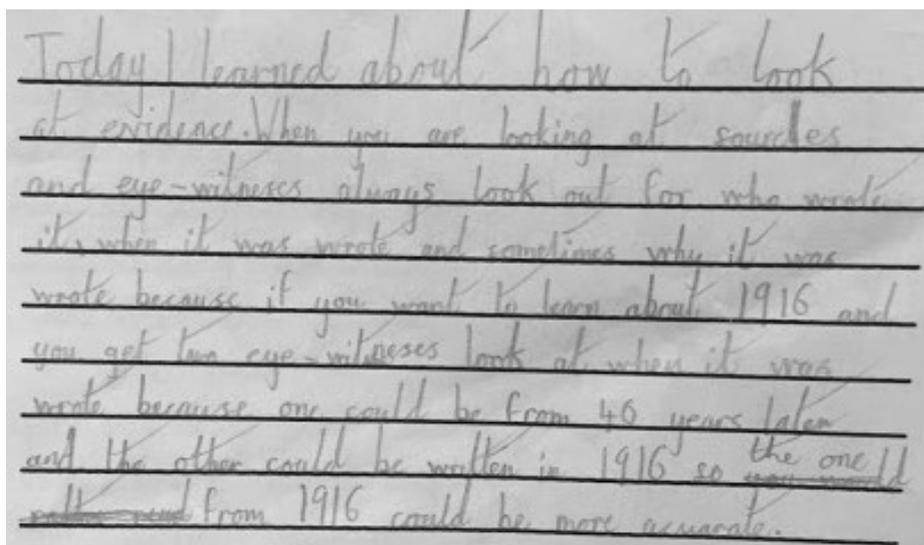
The “Listen and Draw” activity was designed to counteract the very strong belief among the children that an illustration or image is an exact snapshot of the past. The children closed their eyes and listened to an account of inside the General Post Office (GPO) during the Easter Rebellion of 1916. They then drew their own version of the account and the images were compared. An analysis of the images revealed them all to be drastically different although they were inspired by the same source. As conjectured, most children saw that their own illustration was dependent on their own imagination because they were not present at the event and when asked to relate this to the study of history Caoimhe said, “sometimes images are made years

later and the people weren't there so they are using their imaginations. You need to check.”

Despite the connection between photography and creating a record of a past event, a connection children are very familiar with, it is often unfeasible to fully appreciate the particulars of the occasions or the situations in which images were taken or made. To do this, the viewer needs to know more about the context. The “Shall I compare Thee?” activity introduced the children to the importance of acknowledging the provenance of a source. This was something that was generally ignored in the historical enquiries. The activity, which was based on the question: which painting is most reliable and why? involved the children examining two paintings depicting events from 1916 in Dublin. One of these, now an iconic image of the Easter Rebellion, was painted by an Englishman, Walter Paget, in 1918. The other, a much lesser-known painting, was sketched by Margaret Fox who was an eyewitness to the surrender of Countess Markievicz in St. Stephen's Green, Dublin. The children read the sources carefully, noting these facts.

Ruadh (Cycle 2) explained her choice of the Margaret Fox painting as “she was there, she was there when it happened, bravo to me, she did it on the spot. I'm saying she was there at that moment.” Jenna, (also Cycle 3), capitalising on the experience of the previous activity, stated, “and she knows what happened but the other one, he wasn't even there. He had to imagine it” and Brad (Cycle 3) added “cos he painted what he THOUGHT happened like we did, you were reading out stories but we weren't really there so we don't know what it was really like. We used the evidence.” Although Brad was still drawing on a knowledge by acquaintance perspective, he was also acknowledging the role of evidence in the construction of historical knowledge. These comments indicate that the activities were successful. The fact that Brad referred to the previous activity also indicated that the progressional sequence used was effective in challenging the children's ideas about the primacy of photographic evidence. Crucially, the children saw that in order to learn about the past from images, they needed to establish the context in which the image was taken or created. As can be seen from Gavin's (Cycle 2) journal entry for the day, the children were beginning to look at evidence in a more critical fashion (Photograph 6.6).

Photograph 6. 6: Gavin's history journal



The children were then introduced to “The Sourcerer’s Apprentice” conceptual analogy which began with watching a clip from the Disney film “Fantasia” (Disney, 1940); the development of the analogy is outlined in this excerpt from Cycle 3:

CníC: What was Mickey Mouse's job in the movie?

Callum: He was learning how to be a wizard.

CníC: What happened when he cast the spell on the broomstick?

Danka: He thought he knew the spell and it worked but then it didn't and the broom went all over the place.

CníC: And who stopped it?

Caoimhe: The wizard came back and said the spell.

CníC: Yes. Historians have a kind of set of spells like the wizard did and they use them to read the evidence or the sources, that's why I'm calling you sourcerer's apprentices today, get it? Because we're going to practice using them to read history sources. You are going to be sourcerer's apprentices.

Keen to cast their sourcerers spells’ the lesson then introduced the children to the sourcing heuristic ICEACT (Identify, Contextualise, Explore, Analyse, Corroborate and Take it further) adapted from Wineburg’s sourcing, corroboration and contextualising heuristics (1991). This heuristic, which was discussed in Chapter 3, was delivered to the children through modelling and using think-alouds to help make the historical thinking behind each step visible. Each of the steps of the heuristic was explained and how to use the heuristic was modelled to the children. Both the mnemonic and the analogy were successful in engaging the children.

Those involved in the pre-intervention enquiries referred back to the King Rufus task and acknowledged, without prompting, that they had completely ignored exploring the provenance of the sources. Róise (Cycle 2), who had taken part in the King Rufus enquiry remarked:

It is like magic, I can see it now, the picture of the King, ha ha. Do you remember the King Rufus activity? Some of us put everything on the picture and it was drawn a thousand years afterwards and, obviously, that artist fella wasn't even there! That is why we have to be careful when we're looking at photographs and images, especially nowadays.

I viewed comments such as this as a breakthrough in that the children were internalising new ways of looking at historical evidence. ICEACT provided a scaffold for the children and allowed them to engage in a range of sourcing practices in order to analyse the image from a historical perspective. At the end of the activity, the analogy was used again to reinforce the idea that sources are more than repositories of information and by applying the sourcing spell ICEACT, the children could read evidence just like a historian does:

Gavin: ICEACT is a 'cool' way to remember how to be a sourcerer's apprentice!

CníC: If I show you a photo, what are you going to do?

Class: Identify, Contextualise, Explore, Analyse, Compare, Take it Further (shouting).

The "Woman on The Bus" historical enquiry formed the third step in the CCM and allowed the children to practice using the sourcing heuristic independently. Analysis of the transcripts showed that not only did the children apply the heuristic without any difficulties but also that their language and discourse began to be shaped by the process. The sourcing heuristic allowed the children to begin to think historically and it gave them the historical linguistic toolkit they needed and a framework to shape disciplinary language on. This short transcript from Cycle 2 illustrates how:

Róise: Identify. Who wants to read the source? Ok, I will. Will we start with the picture? We have to explore the picture and ask questions. Who are these people? What have they done?

Róise: But what are they doing? Where are they going?

Carlos: So we have to ask questions.

Róise: Yeah, we write them down and try to answer them, let's identify and see what's going on. What is U Press? Is it a newspaper? I think so.

Ruadh: Now C, well the date is December 21st, 1956. What was happening in 1956?

The children diligently followed the steps outlined in ICEACT and Brad (Cycle 3) remarked that his group had to stop at "corroborate", indicating not only that he was familiar with the steps of the mnemonic but that he understood how each part fed into his reading of the image. When supplied with the corroborating text, his group immediately got to work and began again with using ICEACT to explore the document (an excerpt from Rosa Parks' autobiography).

Dimitri: Why is the photo not the same? There has to be a good reason.

Brad: Maybe the picture was taken for the newspaper?

Dimitri: But why a year later?

Rónan: It's like the 1916 painting.

Caoimhín: It's a lie, the photo is a lie.

Brad: But look at who has taken the photo?

CníC: Yes Brad, this is where you, as a historian, pull in all the information

Rónan: United Press International – it's a newspaper, the photo was taken for a newspaper

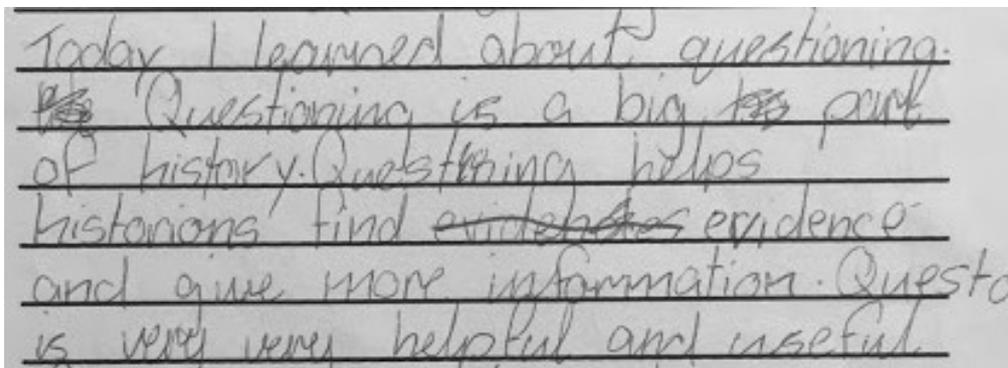
Brad: Because it's a year after they decided black people didn't have to give up their seats

From the excerpt above, it is clear that the children had moved beyond looking at evidence as repositories of information and had begun to interrogate the sources, mining the details for extra information. This contrasted with how they had treated both visual and written sources in the pre-intervention historical enquiries. Previously, many children viewed both forms of evidence simply as bodies of information and, in doing so, completely disregarded the depth that interrogating the source details brings to a historical enquiry. This conceptual shift was enriched by the previous activities which sought to chip away at some of the epistemic bottlenecks the children held about historical evidence. Rónan, for example, referred back to a previous activity, "Shall I Compare Thee?" when discussing the source details.

Notable too was the difference in the quality of the questions children were asking. Previously, questions were information-driven, surface-level questions that required surface-level answers found by skimming or scanning the text. Dimitri

(Cycle 3), as seen in the excerpt above, was perplexed by the differences between the image and the text. He was only one of a large number who began to ask more interpretative questions to get to the crux of these differences. Interpretative questions can be considered as those which cause the reader to dig deeper to find the answer. These kinds of questions ask the “how” and “why” of an event. These types of evaluative historical questions required the children to explain or justify their reasoning thus bringing further depth to the children’s analysis. As can be seen in Dimitri’ journal entry (Photograph 6.7), he saw the value of asking questions about a piece of evidence and how central questions are to the process of historical enquiry.

Photograph 6. 7: Dimitri’s history journal



6.3.6 Historical argumentation. The final unit in both trajectories focused on historical argumentation. Drawing on the first step of the modified CCM, the children were asked to define an argument, and as conjectured, the children from the two cycles were of the opinion that it was “when you fight with someone like your ma or your best friend” (Daire, Cycle 2) and that winning an argument depends on “whoever shouts the loudest and doesn’t let the other person speak” (Róise, Cycle 2). The purpose of the analogy of The Argument Clinic was to allow children to move beyond the idea that an argument was a fight or a shouting match and see that an effective argument relied on 1) a series of connected claims and 2) evidence to back those claims. Arguments, as Chapman (2011) points out, are not simply a list of conclusions, the conclusion to an argument is the end product and effective arguments set out a list of relevant reasons to support the conclusion.

The conceptual analogies used in the second step of the CCM were based on the Monty Python sketch “The Argument Clinic” (MacNaughton, Chapman, Palin, Idle, Gilliam, Jones & Cleese, 2007) and as with Cycle 1, the children both enjoyed the clip and were able to extract from it the main features of an argument. Danka

(Cycle 3), for example, explained, “I know what that means. Proving your point. When you argue you have to have evidence to back up what you are saying. I would love a job to argue.” Brad (Cycle 3), who had initially stated “I always argue with my little brother and I win because I end up screaming at him and he ends up crying and running” saw that his own definition of an argument needed modification and reversed his position: “An argument is when you disagree with someone but it’s not contradiction. Some people thinks its fighting. It’s proving yourself right with evidence.”

The second conceptual analogy “Our Class is The Greatest” provided the children with a series of statements to sort in order to prove the claim that their class was the greatest. Drawing on Chapman (2011) one modification between Cycle 2 and Cycle 3 was the inclusion of specific vocabulary he refers to as “conclusion words” such as “because”, “therefore” and “in conclusion” to enable the children to construct more coherent arguments. “The World Is Round” activity built on the previous one and allowed the children to practice constructing a non-historical argument by devising their own set of statements to back up the claim that the world is round and each of the groups were successful in this. The effectiveness in shifting the children’s ideas on argumentation from the notion that arguing is simply “shouting and fighting” to a more nuanced understanding of how an argument is constructed, rested heavily on the Monty Python clip (MacNaughton et al., 2007), as the small selection below shows:

Rónan: And Christopher Columbus, he circumnavigated.
CníC: But he didn’t.
Rónan Yes, he did.
CníC: No, he didn’t.
Rónan Miss, you aren’t arguing, you are just contradicting me.
CníC: No I’m not (Rónan laughs) - he went as far as North America and then he stopped.

Drawing on the Monty Python clip (MacNaughton et al., 2007), Rónan demonstrated an understanding that contradiction was not an effective way to argue a topic. In summation, he constructed an argument based on the discussions his group had and concluded, “So the world is round. My evidence to back up that claim is that I’ve never heard of anyone falling off the earth; satellites prove the earth is round, so do photos taken by astronauts in space; so therefore, in conclusion, my argument is that the earth really is round.” In this, Rónan drew on the language identified in the

previous activity. When asked if she could construct a historical argument, Danka replied, “Yes, I make a claim, I back it up with evidence and then I conclude. That’s easy.” However, Rónan saw that while some arguments may be quite simple in construction, others may be more difficult depending on the question asked: “If it was a big one like why something happened; that would be harder.”

When asked how this could relate to doing history, the children were able to draw on previous activities to explain why historians might argue in the first place. By pulling ideas from earlier units together, they referred to the existence of multiple perspectives about historical evidence using examples such as historical figures or events. This illustrated that there had been a shift in their understanding of the nature of history moving from a single fixed view to conceptualising history as interpretative.

Where’s the chair? Sometimes we don’t hear everything. And in history, sometimes we can make mistakes about things so dates are important. And two people can look at a piece of evidence and get different stories. You can’t go back to the past to find out what happened so you have to use evidence to build up a story. Like the Vikings, one said they were barbarians and the other saw them as nice. Which is the truth? It’s actually both of them sort of. And significance, that’s important as well. We can’t record everything; we have to select. Like, if you had pasta that won’t be in the history book cos it’s not significant but if your pasta was actually the first of deadly food poisoning that spread around the world, then it could become significant. And evidence can be called sources. And historians are a bit like detectives (Danka, Cycle 3).

As can be seen from Danka’s comments, the activities she encountered played a part in her conceptual transition in regard to the nature of history. Using both the activities and everyday examples, she outlined her new understandings and in doing so, articulated how the various tasks had broken down a number of the epistemic bottlenecks that had been identified in the pre-intervention activities. Based on her comments, it would appear Danka understood that evidence, rather than being simply a mine of information, could be questioned, critiqued and interpreted in a variety of ways in order to create an interpretation of a past that no longer exists. She also saw that history, rather than being “the past” was a selection of events of significance. Rather than viewing the role of the historian as a chronicler of the past, Danka saw that there was an interpretative aspect to the discipline, and possibly

drawing on the very first conceptual analogy of the Lunchtime Fight, she described historians as “detectives”.

The Titanic activity formed the third stage of the modified CCM for this unit and the children were invited to use the information they had learned about history to argue the question “Why did Titanic sink?” Though initially, some groups began to sort cards into true or false piles rather than choosing cards to answer the question posed, this was quickly rectified. Excitedly, the children argued back and forth about each of the cards and in the process produced some lively debates on whether the card was relevant to the question or not.

Ruadh: The rivets, that’s an obvious cause and so is the fact that he (the Captain) ignored the warnings.

Daniel: Yeah, he didn’t listen.

Sean: But it’s not the warnings, he was going too fast, trying to beat the record.

Ruadh: But there were icebergs out there and he knew there was a chance they could hit them.

Daniel: Ah but he was told Titanic was unsinkable. If you thought that, then icebergs would...

Sean: But that’s not connected to why it sank. That’s just what people thought.

Róise: But it could be connected, they ignored the warnings, they were going too fast because they thought it was unsinkable! On God, this is hard, everything can be connected if you keep pulling at it. I don’t think there is one answer!

These debates brought most of the children close to the complexity of the discipline and as can be seen from Róise’s final comment, she appreciated that there can be more than one answer to a historical question. Notable throughout the activity was the importance the children placed on answering the question asked. On numerous occasions, they identified cards that, though useful in providing a context or extra information, did not help to answer the main question on why Titanic sank. As Rónan pointed out “the question is ‘why did Titanic sink?’ but there’s an even bigger question, why didn’t people survive?” Many groups sorted these cards into another separate pile. This was quite interesting as it indicated that some of the children’s perceptions of the nature of history had shifted and they were looking at the evidence in relation to the questions they were posing.

Throughout the activity, the children drew on a number of historical thinking skills. Initially, many of the groups sorted the cards in order of significance and used criteria to justify the placement. Gavin analysed the cards in term of significance and noted “This one is really significant, if Thomas Andrews and the compartments... It would have been ok if four were flooded but not five, that *is* significant.” Seoda (Cycle 2) asked her group “Which ones backs up each other?” a clear reference to the act of corroboration. Likewise, Caoimhe (Cycle 3) also drew on elements of the sourcing heuristic when dealing with the account written by a crew member’s granddaughter and cautioned its provenance by saying, “How do we know that’s true? And they said it 100 years after the accident, why was it kept a secret? They might have been protecting him.” In this, Caoimhe was treating the source in its entirety rather than as a repository of information. In the historical enquiries beforehand, there was very little discussion around the sources and they were mined simply for facts but during this activity the children interrogated the sources and assessed each card for its capacity to answer the question posed.

In summing up her group’s argument as to why Titanic sank, Danka (Cycle 3) demonstrated not only an understanding of how to construct a historical argument, but an ability to use a range of sources to form a coherent narrative using discipline-specific language. In doing so, Danka showed movement beyond treating history as a narrative with simple explanations, and as the excerpt below shows, she saw that the sinking of Titanic was as a result of multiple causes:

Titanic sank because it was going too fast. Competition for passengers was fierce and White Star promised to get them there in six days so they couldn’t afford to go slow. It was Captain Smith’s retirement trip so he wanted to go..., to break the record. Bruce Ismay, the director of White Star Line was on board. And the icebergs, he wanted to make it go faster but there were icebergs. We conclude there were three reasons: there were icebergs, Captain Smith ignored all seven iceberg warnings from crew and other ships and Titantic was going too fast to avoid the icebergs and that is why Titanic sinked.

6.3.7 Overview of the three cycles. The purpose of this study was to examine the epistemic beliefs of Irish primary children in regard to history and historical evidence. It also looked to assess the impact of a targeted instructional sequence on those beliefs in order to contribute to the development of a local instruction theory to support primary school children’s understanding of historical

evidence. The evidence emerging from the three intervention cycles shows that primary children can become increasingly competent at participating in historical analysis when explicit activities to support their epistemic development are employed.

The HLTs originally adapted Stepan's CCM (1996) as a framework to address the epistemic beliefs of children in regard to historical evidence. This was combined with a series of conceptual analogies to formulate both what to teach and how to teach it. As discussed earlier, the analysis indicated that some of the children were not making the conceptual connection between the analogy and the target concept. For example, as indicated in Table 6.9, Sofia saw the value of using evidence to make a claim but was of the opinion that the activity referred to learning about bullying. Further analysis of the students' journals showed that not all of the steps identified in the adapted model of Stepan (1996) were useful in addressing the big conceptual ideas. In response to this, the model was modified and additional analogic activities were created. Thematic analysis of the application of the model in Cycle 2 and 3 allowed for the identification of the steps that proved most effective in affecting conceptual change (see Table 4. 17). These steps were identified as:

- articulation (identifying children's current beliefs about aspects of history)
- working with the analogy (children's interactions during the use of analogy)
- relating to history (connecting to history specific tasks)
- use of analogy (using the analogy in history specific task)
- identifying relationships between base and target (describing the connection between the analogy and the concept)
- concretising relationship (discussing how the analogy does and does not connect)

As can be seen from Table 6.9, the depth of reflective thinking in Cycle 2 confirmed the success of these adjustments and Cycle 3 corroborated that these categories, and this particular order, were conducive to facilitating the process of conceptual change.

The combination of the conceptual analogies and the steps outlined proved successful in creating what I describe as *epistemic disruption* (incidents in which strongly held views were challenged) in student beliefs about history and historical evidence, this in turn, created the conditions for a shift in those beliefs and so facilitated the children's capacity for deeper historical thinking. The results of the post-intervention analysis of the LEUQ, the semi-structured interviews and the historical enquiries confirmed that the HLTs, underpinned by the ACCM, were

successful in re-orienting the children’s understanding of the nature of history while emphasising the role historical evidence plays in its construction. These results are discussed in detail in the following section.

Table 6. 9: Analysis of modified conceptual change model

Category	Articulation	Analogical Confrontation	Engagement	Explication
Multiple Perspective	Students name and discuss their initial ideas about concept	Student ideas are challenged through use of analogy	Students apply new conceptual understanding to a historical topic	Students connect the analogy to the study of history (data taken from student logs)
Cycle 1 The Lunchtime Fight The Fighting Vikings		CníC: Well, the principal wouldn’t just dismiss what those people were saying either, would he? How might that work in history? Danny: Cos that can happen in history, you have to look at who is writing it and what they are saying.	Sammy: like I said with the teachers, I’d see the real side of them and my mam wouldn’t, she would be wrong, cos I know what they are like Sofia: Yes but the trader isn’t really wrong it’s just his perspective	I learned about a fight in yard at break time and we have to find out what happened how did it happen and what I seen, about bullying, we found out the events from the camera and seen he punched him in the nose. Before I thought it was the bully who started it but it was the other one (Sofia)
Cycle 2 One Way or Another Where’s the Chair? The Fight Do You See What I See? The Fighting Vikings	CníC: Can there be different stories about the same event if no one is lying? Daire: Like if two different people say different things about the same thing? Well, one could be right and one could be wrong	Dathaí: The actual event doesn’t change but the way you think about it can. Gavin: I have memories of things long ago that are completely different to my sister’s memories of the same things. I suppose we need to remember that we don’t all remember things the same way and we don’t history things the same way.	Freya: The Arab is a trader, he sees nice things, the monk is afraid, he knows what they can do. It’s about the perspectives Daire: Remember about the optical illusions? We all saw different things. I don’t know why, but, I don’t know, maybe one person knows what the Vikings are really like, or he thinks he does. Ok, we need to think about this, if you were an Irish monk, what would you think?	Today I learned about what historians have to do to figure out a story. They have to ask questions, investigate, have to find evidence and historians not all the time find out the complete answer about the story the same way principals don’t find out who did what? And what time?
Cycle 3 One Way or Another	CníC: are two different accounts of the same event possible if	Danka: I think there can be mistakes. There can be two sides to a story in history, you need to	Danka: I know why there are two different perspectives, The monk says bad things	That you have to collect every piece of evidence that you can. And you have to find

Where's the Chair?	nobody is lying?	check the evidence properly, not just by reading it or looking, you have to ... em be a historian. By being a history detective like what we were doing with the fight. We got all the evidence we could find and we looked at it and like Rónan said we looked at the relationship.	about them because the Vikings only acted bad towards the monks but the Persian Guy he goes over to them and there is no rivalry between them and the Vikings probably want to do business with him he doesn't know that they attacked the monasteries, The monks do so they think the Vikings are always bad But they might not be always bad	out more about the witness. Remember that history can change over time. People see differently than other people sometimes.
The Fight				
Do You See What I See?				
Darla				
The Fighting Vikings				
	Brad: yeah, I mean no, we can't have two that are different.	Caoimhe: Evidence you need to look for evidence, asking questions	Brad: So there we have two different accounts, is it? of the same people	
	CníC: does anybody else agree with Brad?	Caoimhe: Perspectives	Rónan: A bit like the optical illusions they are both Good and Evil	
	Class: 10 out of 18 agree		Conor: Like Darla? At first she was really annoying	

6.4 Post-intervention results

In order to ascertain the extent to which the children's frames of reference were shifted in relation to their understanding of the nature of history and the role historical evidence, the pre-intervention instruments were used again after the teaching interventions. The following section outlines the results of these post-intervention activities and begins with the quantitative findings relating to the LEUQ data. This is followed by an analysis of the post-intervention interviews and the historical enquiries.

6.4.1 LEUQ results The LEUQ was administered to the same children again at the end of each cycle. The results of the pre- and post-LEUQ are provided below to allow for comparison.

6.4.1.1 LEUQ Cycle 1. In regard to the overall pattern in Cycle 1, three children still remained at the Absolutist level and one moved towards Multiplism. The other student showed no overall movement and remained at the Multiplist stage. Interestingly, some positive movement was apparent within domains, particularly those relating to taste (the stew is/isn't spicy) and aesthetics (the first painting is

better/not better). For instance, two children (Calvin and Sammy) moved from an Absolutist stance to a Multiplist one in the Taste category while the other three remained at Multiplist. In the Aesthetic category, one (Sammy) made no movement, one (Sofia) moved from Absolutist to Multiplist, whilst the other three remained at Multiplism. However, within this category, two of the children showed traces of Evaluativism. In the Values category, three children moved from Absolutist stances to Multiplist ones (Danny, Calvin and Sammy) whilst the other two remained at Absolutism; however, both of these showed traces of Multiplism that were not present in the pre-test questionnaires. In the Social Truth category, three students (Sofia, Calvin and Sammy) showed no change and two students moved towards a Multiplist stance (Rachel and Danny). In the Physical Truth category, four students showed no change but all four showed traces of Multiplism that were not evident in the pre-test. Only one student (Danny) moved from an Absolutist position and this student showed traces of Evaluativism.

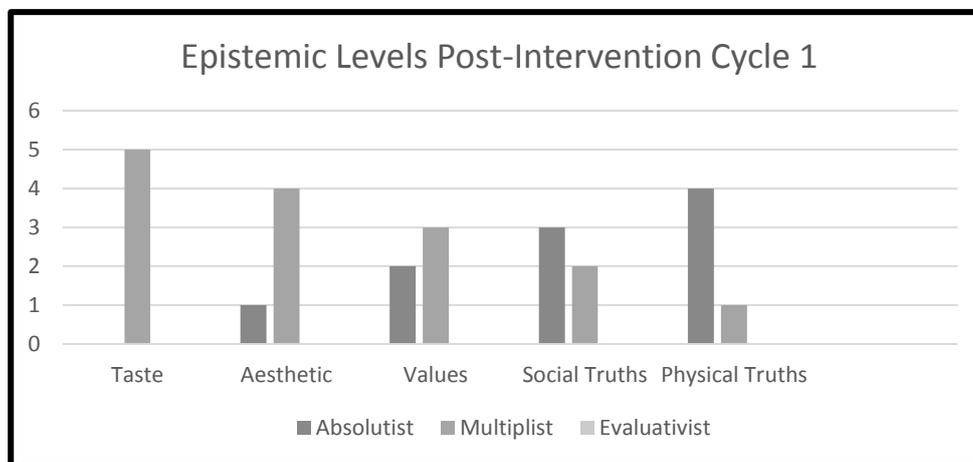
Table 6. 10: Pre-test and post-test LEUQ Cycle 1

Student	Judgment domains						Pattern
	Taste	Aesthetic	Value	Social Truth	Physical Truth		
Sofia	Pre	MAM	AAM	AAA	AAA	AAA	MAAAA
	Post	MMM	AMM	MAA	AMA	MAA	MMAAA
Rachel	Pre	MMA	MMM	AAA	AAA	AAA	MMAAA
	Post	MMM	MEM	AAM	MAM	AMA	MMAMA
Danny	Pre	MAM	MAE	MAA	AAM	AAA	MMMAA
	Post	EAM	MMM	MAM	EAM	MEA	MMMMM
Calvin	Pre	AAM	MMM	AAA	AMA	AAA	AMAAA
	Post	AEM	MEM	MMA	AMA	AAM	MMMAA
Sammy	Pre	AAM	AAM	AAM	AMA	AAA	AAAAA
	Post	MMA	AMA	MMA	AMA	MAA	MMAAA

As can be seen in Table 6.10, the categories of social truths and physical truths proved harder to effect change but the presence of some epistemic shifting within these is considered a positive outcome and indicates that the interventions had some impact on the student epistemic beliefs. These results appear to confirm that the transition from Absolutist to Multiplist is easily achieved whereas progression from Multiplist to Evaluativist is somewhat more problematic (Figure 6.2). This is in keeping with Kuhn and Weinstock's (2002) assertion that subjectivity is first recognised in the judgement domain of personal taste, then in the aesthetic judgement, next in the value judgement, next in the social truth judgement and

finally in the physical truth judgement. Similar patterns have been found in other studies (Mason & Scirica, 2006; Weinstock & Zviling-Beiser, 2009).

Figure 6. 2: Bar chart of post-intervention epistemic levels in Cycle 1



6.4.1.2 LEUQ Cycle 2. The post-questionnaire, administered a week after the final teaching intervention, showed changes in the overall patterns. Two children remained at the Absolutist level, five scored as Multiplists and four were deemed Evaluativists. While five children displayed a slight upward movement, which is reflected in Table 6.11, close examination of those results reveals that most of this movement may be attributed to shifts within the domains of taste, values and aesthetics. Perhaps more interesting to note are those changes within the domains. A number of the participants showed movement within the bands themselves.

In regard to the domain of Taste, two students moved from Multiplist to Evaluativist (Róise and Caoimhe), one moved from Absolutist to Multiplist (Daire) and the other eight students remained the same. Three of these were at the Evaluativist level already and could move no further. In terms of Aesthetics, one student (Freya) moved from Absolutism to Multiplism. Seven saw no change but two of these were Evaluativists already. Three students (Caoimhe, Róise and Ailbhe) moved from Multiplism to Evaluativism.

In the domain of Values, three students (Daire, Bethany and Ruadh) moved from Absolutism to Multiplism. The other eight remained at the same level. However, four of these (Róise, Gavin, Caoimhe and Ailbhe) were Evaluativists already. In the domain of Social Truths, three students moved from Absolutism to Multiplism and all the others showed no change. Again, three of these were Evaluativists already. In the domain of Physical Truths, three students (Ailbhe, Róise

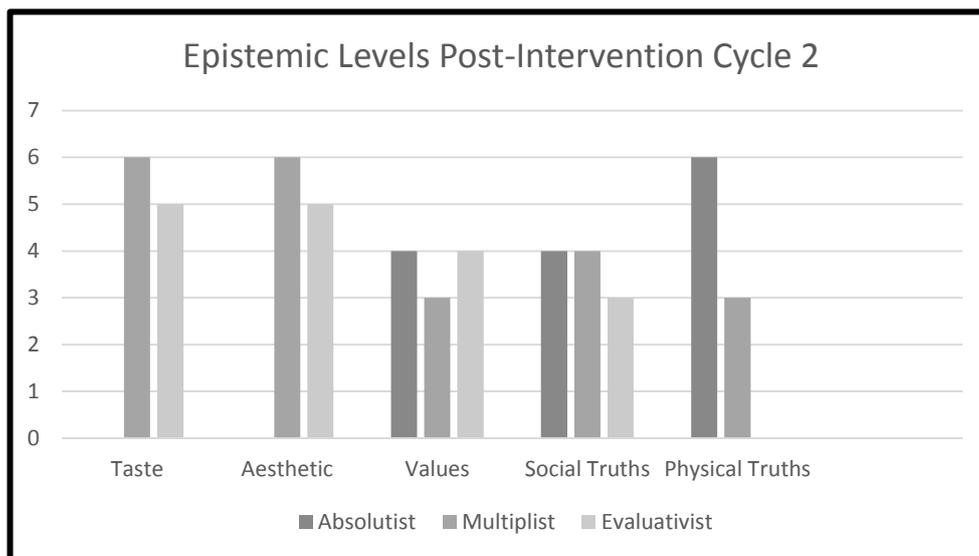
and Daithí) moved from Absolutism to Multiplism. The rest of the students showed no change but two of these were Evaluativist already.

Table 6. 11: Pre-test and post-test LEUQ Cycle 2

Judgment domains							
Student		Taste	Aesthetic	Value	Social Truth	Physical Truth	Pattern
Róise	Pre	MEM	MMM	EEA	MAM	AAA	MMEMA
	Post	EEM	EEM	EEM	MMM	MMM	EEEMM
Daire	Pre	AAA	MMM	AAA	AAA	AAA	AMAAA
	Post	MMM	MMM	EAM	EMA	AMA	MMMMMA
Freya	Pre	MAM	MAA	AAA	EAA	AAA	MAAAA
	Post	EAM	MMA	MAA	EAA	MAA	MMAAA
Sean	Pre	AMM	MMM	AAA	AAA	AAA	MMAAA
	Post	AMM	MMM	AMA	AAA	AAA	MMAAA
Ailbhe	Pre	EEE	MMM	EAE	EEA	AAM	EMEEA
	Post	EEE	EEM	EME	EEM	MMM	EEEEEM
Datháí	Pre	EEE	EEE	AAA	AAA	AAA	EEAAA
	Post	EEE	EEE	AMA	MAA	MMA	EEAAM
Bethany	Pre	EAM	MMM	AAA	AAA	AAA	MMAAA
	Post	EMM	MMM	MMM	MAA	MAA	MMMAA
Gavin	Pre	EEE	EEE	MEE	EEM	EEE	EEEEEE
	Post	EEE	EEE	EEE	EEE	EEE	EEEEEE
Seoda	Pre	EAM	EMM	AAA	MAA	AAA	MMAAA
	Post	MMM	EMM	MAA	MMA	MAA	MMAMA
Caoimhe	Pre	MMM	MMM	EEA	EAE	EEE	MMEEE
	Post	EEE	EME	EEM	EEE	EEE	EEEEEE
Ruadh	Pre	MMM	MMM	AAA	AAA	AAA	MMAAA
	Post	MMM	MMM	MMM	MAM	AAA	MMMMMA

Similar to Cycle 1, the patterns showed an upward movement from an Absolutist stance to a Multiplist stance in the domains of taste and aesthetics and less shifting within the domains of social and physical truths. In regard to the scores pertaining to truths of the social and physical world in the post-intervention questionnaire, six of the children indicated an Absolutist stance in regard to truths of the physical world and six of the children indicated an Absolutist stance in regard to truths of the social world, a drop from the previous results which indicates that the activities in the HLT were successful in causing some epistemic shifting upwards (Figure 6.3).

Figure 6. 3: Bar chart of post-intervention epistemic levels in Cycle 2



Children such as Gavin, Ailbhe and Caoimhe, who, as discussed in Chapter Four, consistently achieved top marks in standardised tests in English and mathematics, tended to fare better in the social and physical truth domains and it would appear that the specific interventions resonated on a much deeper level with them. Although the LEUQ did show movement, it was still, at this point, difficult to determine from these results whether children simply learned and applied a new methodology (procedural knowledge) which allowed them to execute more sophisticated demonstrations of historical ability, such as supporting claims with evidence to back them, or whether there was some sort of epistemic shifting as a result of the intervention.

6.4.1.3 LEUQ Cycle 3. In the domain of Taste, six students moved shifted to a different category and one student (Danka) remained the same. In the domain of Aesthetics, two students stayed at the same level but one of these was Evaluativist already. Four students moved from Multiplist to Evaluativist. One student, Katelyn, moved from Evaluativist to Multiplist. In the domain of Values, only two students (Caoimhe and Katelyn) moved position. Five students stayed the same but two of these were Evaluativists already. In the domain of Social Truths, all students made a shift in category. Five students moved to Evaluativism and two moved from Absolutism to Multiplism. In the domain of Physical Truth, three students remained at the same level and three shifted to the next level. Overall, every student moved from one level to the next. Three students moved from Absolutism to Multiplism and four students jumped from Multiplism to Evaluativism,

The results of the post LEUQ from Cycle 3 (see Table 6.12) showed a marked difference from the first LEUQ results. All of the children moved upwards in terms of epistemic stances. The domain difference is interesting because epistemically, some domains are more subjective (e.g., taste) than others (e.g., truth about the physical world). According to the results of the post LEUQ, three children presented as Absolutist, eleven were deemed Multiplists and eight presented as Evaluativist. One student, Rónan, was absent for the post-intervention questionnaire.

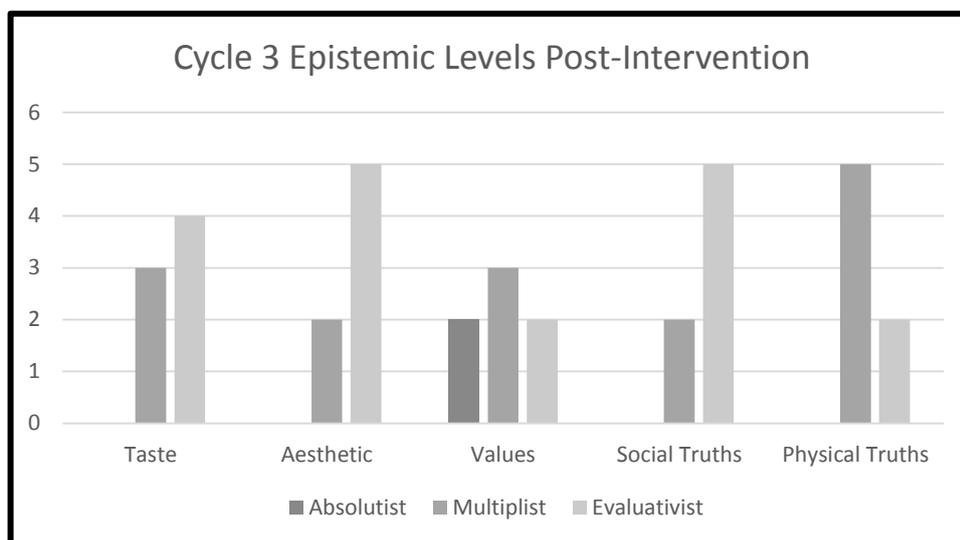
Table 6. 12: Pre-test and post-test LEUQ Cycle 3

Judgment domains							
Student		Taste	Aesthetic	Value	Social Truth	Physical Truth	Pattern
Caoimhe	Pre	MMM	EEM	EAA	AAM	AAA	MEAAA
	Post	EME	EEE	EMM	MME	MME	EEMMM
Ivan	Pre	MAM	MEM	MEA	MAM	AMM	MMMMM
	Post	EEM	EEM	MMM	EEE	EMM	EEMEM
Danka	Pre	MEM	MMM	MEE	MEM	AMM	MMEMM
	Post	MEM	MEE	EEE	MEE	EEM	MMEEE
Katelyn	Pre	AAA	EME	AAA	EAA	AAM	AEAAA
	Post	EEE	MEM	AEM	EEE	EMM	EMMEM
Conor	Pre	AMA	MMM	MAA	AAA	MMM	AMAAM
	Post	MMM	MMM	MAA	MMM	AMM	MMAMM
Enda	Pre	AAA	MMM	MAA	EMA	AAA	EEMMA
	Post	MMM	EME	EAA	MEE	EEE	MEAE E
Eimear	Pre	MMM	MMM	MEE	MMM	MMM	MMEMM
	Post	EME	EEE	EME	EEE	MEM	EEEEM

Caoimhe, who scored an overall Absolutist stance prior to interventions, displayed a predominantly Multiplist stance post interventions. Of note was the fact that she scored significant movement from one level to the next in all areas except values, which saw no change. Her most significant change was in the areas of Social Truth and Physical Truths. Ivan, who scored as pure Multiplist pre-intervention, displayed a predominantly Evaluativist stance post interventions. He also showed significant movement in all areas except values which stayed the same. There was some movement within this but not enough to move to the next level. The most significant change for Ivan was in the area of Physical Truths. Likewise, Danka moved from a Multiplist stance prior to interventions to an Evaluativist stance post interventions with very little change in the overall areas of taste and aesthetics. Significant movement was found though, in the areas of values, social truth and

physical truths. Rónan’s post LEUQ results were not included because he was on a family holiday during testing.

Figure 6. 4: Bar chart of post-intervention epistemic levels in Cycle 3



As can be seen in Table 6.13, in the pre-test LEUQ (Cycle 1), four children scored as Absolutists and one as Multiplist. In the post-test LEUQ, the number of Absolutists dropped to two and the number of Multiplists increased from one to three. However, no child moved towards Evaluativism. For Cycle 2, in the pre-test LEUQ, seven children scored as Absolutists, one as Multiplist and 3 as Evaluativists. In the post-test LEUQ, the number of Absolutists dropped from seven to two, and the number of Multiplists increased from one to five, and the number of Evaluativists developed from three to four, which means one Multiplist became Evaluativist. For Cycle 3, in the pre-test LEUQ, three children scored as Absolutists, five as Mutliplist and zero as Evaluativists. In the post-test LEUQ, the number of Absolutists moved from two to zero, the number of Multiplists decreased from five to three, and the number of Evaluativists increased from zero to four.

6.4.1.4 Comparisons over the three cycles based on the student groups

- (1) *Absolutists*: the number of students that remained in the same position (Absolutism) decreased. To be specific, in Cycle 1, two of the four students remained at the Absolutist level, in Cycle 2, only two of the seven students remained in this position, however, in Cycle 3, all three Absolutists moved beyond this stance.

- (2) *Multiplists*: the number of students shifting from Absolutist to Multiplist groups increased. To be specific, in Cycle 1, two out of four students shifted from the Absolutist group to the Multiplist one. In Cycle 2, five out of the seven Absolutists became Multiplists and in Cycle 3, all Absolutists became Multiplists.
- (3) *Evaluativists*: the number of students shifting from the Multiplist to Evaluativist groups increased. To be specific, no Evaluativists were found in both pre- and post- tests in Cycle 1 but in Cycle 2, the number of Evaluativists increased by one as the three existing Evaluativists remained at that level. In Cycle 3, all of the Multiplists moved to Evaluativism. (one student was absent).

Table 6. 13: Comparison of pre and post LEUQ results

Cycle	Pre	Post
Cycle 1	4 Absolutists 1 Multiplists 0 Evaluativists	2 Absolutists 3 Multiplists 0 Evaluativists
Cycle 2	7 Absolutists 1 Multiplists 3 Evaluativists	2 Absolutists 5 Multiplist 4 Evaluativists
Cycle 3	3 Absolutists 5 Multiplists 0 Evaluativists	0 Absolutists 3 Multiplist 4 Evaluativists

Based on the results of the cross comparison of the cycles (see Table 6.13), it can be seen that the number of students moving from one epistemic stance to another increased after each iteration of the teaching interventions thus indicating that the teaching interventions were having increased success.

6.4.2 Semi-structured interviews (post-intervention). To evaluate the effectiveness of the HLTs in challenging the children’s epistemic beliefs about history, the children were interviewed again post-intervention. One of the firmest beliefs many of the children held in the first set of interviews was that of equating history with both the distant and the immediate past and this belief played a considerable role in their conceptions of the subject.

6.4.2.1 Defining history – *it's not the past, it's studying the past.* While the post-intervention interviews revealed that children saw that the past and history were connected in some ways, there was a very definite recognition that they were not quite the same thing. Ivan (Cycle 3), for example, claimed that “history can't be just the past because then you would have to study stuff that is not important” and

Katelyn (Cycle 3) provided an example to illustrate: “It’s not the past, the past is anything, the past is putting your shoes on, history is studying significant events that happened.” Jenna (Cycle 2), while maintaining the connection between the words the past and history had also begun to see the difference between the two and drawing on the activities used in the HLT, added in the importance of historical significance when studying historical events. She explained that “history is, like, studying something that has happened in the past, like see the way we’re talking now, that’d be history but not the history we study. Like we wouldn’t be learning about our conversation now in history class cos it’s not significant. You might think it is Miss, but it’s not, not really, sorry about that.”

6.4.2.2. Historical knowledge: evidence, you look at it and build up an idea about what the past was like. When asked about historical knowledge in the pre-interviews, Sammy (Cycle 1) was adamant that we get this information from “someone who was there.” In the post-interview, he displayed a much more sophisticated understanding and explained that historical knowledge comes “from evidence, you look at it and build up an idea about what the past was like.” All of the children interviewed had a similar understanding and were also able to explain the variations in interpretations of evidence from the past. Róise (Cycle 2), while reaffirming her belief that history is a study of change over time, added to this her realisation that history can change due to interpretation. She described history as “changes that happen through the years, and it can change, well the event doesn’t change but the story can.” To illustrate this point, she provided her own example of how a story can change over time with bits added and taken away: “Example, let’s say I dropped this magical orb and he was going to give me a hundred dollar or even euro, I dropped it and 100 years from now someone says that that orb actually had ten grand in it, do you get me that way? It changed through the years, from 100 to 200, 400 and so on. So the event didn’t change but things can get added to it yeah?” Evident in her example is a recognition that history is not a fixed and objective body of certain knowledge but is something that is constructed from evidence and continually shaped. Róise, as also evidenced from the results of the LEUQ, had begun to think of knowledge itself as uncertain and was moving towards a more Evaluativist epistemic stance.

Like the students in Bain’s study (2005), many of the children in the pre-intervention interviews displayed an understanding that history was a fixed reporting of a body of facts that experts chronologically ordered and put into textbooks so

students could learn them off to pass tests. In contrast to this initial understanding of history, many children later exhibited more sophisticated stances in regard to the certainty of knowledge (e.g., an understanding that there may be multiple answers to complex problems) and beliefs that acknowledge history as a subject that can evolve and change. As Ivan (Cycle 3) pointed out “History stories can change like if they're just passed on throughout the years. How we understand things can change, like in the 19th century someone finds out that something else happened then we have a different point of view.”

They also demonstrated more sophisticated epistemic positioning concerning the role of evidence, how historical knowledge is justified and the existence of multiple explanations of the same event. What was apparent was that once the children had begun to see that history was the interpretation of selected past events, rather than the past itself, their understanding of it shifted considerably. In fact, the words *study* and *argument* featured in almost all of the children’s responses when defining history and indicates that the children were internalising the idea of history being an active rather than static process that involved more than the reading of a textbook. As Seoda (cycle 2) explained, “it's not the past, it's studying the past, history is about learning *about* the past. It's built up from information and people... and its arguments and all. History is an argument about events, historians argue.” This was a definite indication of a shift in epistemic beliefs about history.

6.4.2.3 Doing history: you talk about the arguments, you think about the arguments and then you can write about the arguments. In contrast to the beliefs articulated in the pre-intervention interviews, the children now held a much stronger belief in the interpretative element of doing history and saw their role in history class as that of detectives sifting through evidence. This shift in thinking was particularly noticeable in Cycle 3 of the study. Even when children still referred to history as the past, there was an emerging understanding that interpretation of evidence played an important part in the study of the discipline. Daire (Cycle 2), who still viewed history simply as “what happened in the past” nevertheless showed an understanding that history is a subject dependent on the analysis of evidence. He described it as a subject that required “evidence to back it up... and you’d also have to look at the source and so that it doesn’t sound stupid, it’s basically sources and evidence.”

Of interest was the fact that none of the children interviewed (apart from Gavin) referred to the use of textbook as the best means of doing history. Instead, they drew on practices used within the discipline. Seoda, for example (Cycle 2),

described some of these practices as “look at the sources, mark them off, look at dates, use corroboration- like do the sources back up each other? Basically, you talk about the arguments, you think about the arguments and then you can write about the arguments.” Though Seoda had acknowledged previously that history was “built up from arguments”, in her post-intervention interview, she displayed a much deeper and more comprehensive understanding of how evidence and interpretation worked together to create historical arguments.

Gavin, when asked what the best way to learn history was, replied, “Well, it might not be the best way, but one of the good ways, and you might not agree, is to learn from the books.” While Gavin’s reference to the use of textbooks as a preferred means of studying the past may seem like a regression of his original epistemic stance, his justification for doing so positioned him firmly within a critical, Evaluativist stance: “Well the books, most of the time, not all of the time, have good information. I know that some books might have the wrong information like one book could say that em, like about one thing and another book could say something different, so it’s not always the best way but it’s easier to read the books. They are written for kids. Sometimes the sources can be hard, like difficult.” In essence, Gavin was acknowledging the fact that the textbook author had engaged already in the heady acts of historical cognition needed to interpret the past but he also had an appreciation that the textbook not only has the potential for error but is the result of someone else’s interpretation of the historical evidence. This apparent preference for the textbook was accompanied by sound and valid reasons but was tempered by his admission that using sources and evidence is far more interesting (though far more taxing in terms of critical engagement): “I love using the sources because you get to do more and be more active and you get to, ehh, can learn more, cos you look at what other people said.”

6.4.3 Post-intervention enquiries. The post-intervention enquiry was based on the actions of Oliver Cromwell in Drogheda, Ireland, during his Irish campaign in 1649. Cromwell’s actions, to this day, are contested and the spectrum of historical interpretations range from claims of the slaughter of civilians to claims that he acted within the confines of the rules of seventeenth-century warfare. It is this contestation that inspired the enquiry question “Did Cromwell order the massacre of innocent civilians at Drogheda?” To answer the question, each group was provided with a range of sources which included pictorial evidence, eyewitness accounts and historians’ interpretations. As with the King Rufus enquiry, this activity aimed to

reveal how the children's epistemic stances informed their engagement with the historical evidence and it also indicated whether the epistemic bottlenecks had been addressed or not. The following analysis of the historical enquiries is organised around these main bottlenecks.

6.4.3.1 Using evidence. Wineburg's influential piece (1991) on historical thinking indicated that adolescent students do not instinctively use sourcing techniques when analysing historical documents and found that the students in the study did not attend to details such as the provenance of the source, contextualisation or corroboration. Instead, they placed their emphases on the content contained within the sources. Furthermore, they did not attend to discrepancies among the documents analysed. Although these students were high school students, there were striking similarities between how they approached the analysis of evidence and how the children from this study did prior to the interventions. Like the high school students, the vast majority of the children, from all cycles in this study, initially viewed the historical evidence as repositories of information and used the sources to extract factual details to answer the enquiry questions posed. Heuristics such as corroboration, contextualisation and sourcing were rarely applied during the pre-intervention enquiries though it is important to note that some students did engage in these acts.

Once the children had been given specific supports, their level of engagement with the historical evidence increased in sophistication and the evidence was approached in an increasingly critical fashion. One of these supports was a sourcing heuristic I developed for use by primary-aged children. The children were introduced to the acronym ICEACT (Identify, Contextualise, Explore, Analyse, Corroborate, Take it Further) during the teaching interventions and this heuristic was effective in scaffolding their approach to historical evidence. Without prompting, each group used the ICEACT heuristic to engage with the sources. ICEACT effectively scaffolded the children's analysis of the evidence and they initially applied each step methodologically and in strict chronological order. However, as the enquiries progressed, they moved beyond the formulaic application of each step and began to use it in a more comprehensive and fluid fashion. While the steps of ICEACT worked as an initial scaffold, just like an actual scaffold, after a point it became unnecessary as this example from Cycle 3 shows:

Eimear: We have three pieces of evidence that this was a massacre.

Danka: Go on then.

- Eimear: According to the Marquise ... Cromwell's soldiers promised quarter but when they had the power they were still killed.
- Danka: He was a royalist.
- Rónan: And he wasn't even present at Drogheda, he wasn't even present there.
- Enda: And rules of warfare.
- Eimear: Yeah but when you put them together, like corroborate, then you get a bigger picture.

Attention was given to source details (a move conspicuously absent from the pre-intervention enquiries on the death of William Rufus) and this added considerable depth to the children's analysis. The ICEACT scaffold allowed children to move beyond their "repositories of information" understanding of historical evidence and allowed them to view the source details as relevant to the analysis of the source. The majority of the children, across all cycles, explicitly named the author and date of the sources and made efforts to evaluate the positionality of the author/creator (positionality, in this context, refers to the background and motivation of the author in creating the source). This also allowed the children to consider issues such as whether the author was present at the event and how reliable the source was.

- Gavin: Yes, for the men at arms but like you said, these are all from Cromwell himself.
- Seoda: Have we corroboration anywhere?
- Róise: Yeah loads, source A and B and C are all similar
- Gavin: Is this a reliable source? Not really, because of all those reasons, even though it's leaning towards a massacre.
- Seoda: We'll look for others to corroborate.

In terms of conflicting evidence, they were now equipped with a range of strategies to engage with competing narratives. In the pre-intervention enquiries these conflicts in the evidence were largely ignored, or if noticed, they were mentioned but not followed through. Post-intervention, the children actively engaged with them using strategies such as corroboration, contextualisation and positionality. The ICEACT heuristic provided children with an "intellectual toolkit" (Lee, 1998) which allowed them to address issues such as conflicting accounts. The evidence became, for the majority of children, much more than authorless sources of information and as evidenced from their discussions, the children exhibited a deeper

conceptual understanding of the nature of historical evidence rather than simply the replication of a learned technique.

Gavin: But some of the evidence damns him, like his soldiers used children as shields.

Dathaí: We looked at that source and Anthony Woods wasn't there.

Gavin: That's smart but do we have proof?

Róise: We have other accounts that don't mention it too. Like the Irish leader, what's his name?

Ailbhe: Claredon.

Róise: He doesn't mention a massacre and he would have, he was Irish.

6.4.3.2 Posing questions. Even though the children had been equipped with a toolkit that allowed them to tackle epistemic issues such as multiple or conflicting claims, there was an acknowledgement that this is in fact, a taxing endeavour. As Sofia (Cycle 1) argued when looking at historians' accounts of the event: "Oh this is a bit hard, some are saying yes and some are saying no." Previously, Sofia had simply ignored the contrasting accounts of King Rufus' death but in the post-intervention enquiry, the conflicts were tackled and problematised and this led to new questions about the sources. These new evaluative questions opened up new lines of enquiry and led to deeper engagement with the evidence.

Sofia: He says no unarmed citizens, he's saying no massacre, he's saying the evidence backs him up and the bishops. But, if so many were killed, who killed them?

Rachel: We don't know yet if they were killed and if they were, where are the bodies?

Sofia: Yeah but if loads of people say it, you know, no smoke without fire. Let's look at the other historians.

Rachel: This one is an English historian. 1881. What's he saying? There's no evidence only rumours.

Sofia: I disagree, there is eyewitness accounts, the priests, the soldiers.

Engaging in enquiry-based practices develops important historical research skills in young historians and is dependent on the asking and answering of appropriate questions. The activities developed for the HLT were designed to enable the children to see the importance of interrogating the evidence with relevant questions and this appears to have been successful. Rónan (Cycle 3), for example, pointed out during the Titanic enquiry, that the questions a historian asks about the

evidence drives the direction of this interrogation. Drawing on van Drie and van Boxtel's Framework for Historical Thinking (2008), the types of questions the children asked in the pre- and post-intervention enquiries were compared.

For the purpose of analysing the results, historical questions were categorised as either factual or interpretative. Factual questions such as "what year did this happen?" are considered surface-level questions which can be answered with factual information that is found by skimming or scanning the text. In the pre-intervention enquiries, although on occasion, deeper questions were asked, the majority of questions the children posed were surface-level questions such as "How many people were there?" (Cycle 3) or "Is that Walter?" (Cycle 1). The type of questions posed reflected the children's own definitions of history in which the focus rested on retrieving and regurgitating facts about the past.

In contrast, the post-intervention enquires demonstrated a change in the type of questions asked by the children. Evident was a much higher rate of interpretative questions. These may be classified as those questions that cause the reader to dig below the surface to find the answer. van Drie and van Boxtel (2008) describe these "deeper" questions as evaluative historical questions because they require the students to explain or justify their reasoning. As can be seen in the extract below, Ruadh (Cycle 1) used a series of evaluative historical questions to help her navigate her way through the sources.

Barbour's wretches? I don't know, basically he's saying there, he regrets this, wait, what's he regretting? Like what if the Irish didn't actually do that to the English in the first place? Ah no, it's the English doing it to the Irish. Ok, this one, it's a Jesuit priest, he was there: who? why? what? when? where? He saw it, he wrote it down, he was there. Wouldn't he have mentioned it?

The type of questions asked in the post-intervention enquiries seemed to mirror the children's new conceptions on historical evidence in that the sources were interrogated rather than simply mined for information. This indicates that the HLT was successful in breaking down some of the epistemic bottlenecks the children held, particularly those about historical evidence.

Peer collaboration also allowed the children to work in-depth with the evidence before them. While there were some difficulties with terminology such as "resolved" and "siege" these tended to be resolved during group discussions and by children pooling their collective knowledge together. There were also a number of

times where children resorted to their original ways of approaching historical evidence but these were much rarer than before and usually involved some sort of disruption within the group. For example, Enda, in the excerpt below, was unfocused at the beginning of the task and his irrelevant comments were designed to elicit a laugh from the others.

Danka: Ok, this one is made by Cromwell, we need to read all of it. Remember ICEACT, (reads source).

Enda: Santy is real.

Amanda: Stop messing.

Eimear Ok it's Monday 6th September, he asked Aston to surrender.

Amanda: Read next source (field notes: *no source details*).

Enda: It's a massacre. And they killed all in the church – this is nasty.

Danka: No Enda you have to read who wrote it and when.

As can be seen above, he was quickly corrected by other members of the group but the train of thought had been interrupted and both Katelyn and Enda failed to account for the source details when reading the account, leading him to jump to conclusions. This was, however, rectified by Danka who refocused the discussion. This would seem to suggest that some students had internalised historical thinking skills more deeply than others.

6.4.3.3 Images as evidence. An image-based source was specifically included in the evidence pack to assess whether the children's approach to reading image-based evidence had changed following the interventions. In the pre-intervention enquiry, the majority of children viewed the image as a snapshot of the event, despite the fact it had been sketched by an artist over 800 years later, and many used it solely as a source of information. Rather than formulating an interpretation of the image based on its content, the post-intervention image was treated as a historical source and subjected to the same degree of scrutiny as the text-based sources. Ruadh's (Cycle 2) analysis of the image of Cromwell's soldiers attacking innocent civilians showed a transformation in her thinking about images as evidence:

Source E: Oh look, this is a picture, an engraving by Artwork. That looks like a woman. This is a good source cos you can actually see them going into battle, maybe use ICEACT? Highlight the date! Not taken at the time, remember what we were doing? The artist could be using their imagination. We have to be cautious, like at the GPO thing. Look at the date.

As can be seen, Ruadh approached the image in a much more critical fashion and used the ICEACT scaffold to assist her analysis. Notable is her attention to the date of the source and her subsequent reference to the activities from the HLT. The reference to the activities indicates that they were successful in shifting her beliefs about historical images and this shift was apparent across all cycles, showing a marked alteration in the children's ideas about historical images as this example from Cycle 3 shows:

Danka: That's nearly five hundred years later, the artist hasn't been there so since everyone, since Charles' reign, everyone thought Cromwell was bad, so by the time the artist drew it everyone hated him, so he made Cromwell look like he was bad and painted him using his imagination doing bad stuff.

Brad: Or maybe the artist read some of the evidence of what he did and said hang on, this is an eyewitness, he told his brother, this is what he said so this is what happened.

Danka: He's obviously an artist, he would just do what he was paid to do, we need to ask who paid him. Obviously it was someone who hated Cromwell.

As can be seen from the discussion above, the image was viewed in a much more comprehensive manner and the positionality of the artist was interrogated with a high level of sophistication. Interestingly, there was also an acknowledgement of the possible role of evidence in the creation of the image, showing a growing awareness of how history is constructed and interpreted. Rather than simply gathering facts from the image, or viewing the image as an objective snapshot of events "as they really happened", the trustworthiness was examined with reference to the context of the time in which it was created. Furthermore, questions were posed about the purpose and intent of the image and the artist and who may have commissioned him.

Amanda: Ok, this image was made in the 1800s and it happened in the 1600s so maybe it's wrong.

Eimear: Ok, we need to look at that, maybe it's not a massacre.

Enda: What? Look, he's trying to stab the woman through the hand.

Amanda: But we can't trust it too much, it's made in the 1800s and that was 1649.

Danka: Maybe the artist, who wasn't there, just heard 'oh, he's bad so I'll draw it bad.'

Taken together, these enquiries show that while many primary children have difficulties when reading historical evidence, epistemic-focused interventions can significantly improve their abilities to read evidence critically. As this excerpt from Gavin (Cycle 2) shows, this level of critical engagement was shaped not only by the sourcing heuristic but also by the epistemic-focused interventions from the HLTs.

Yes, but where does that come from? We looked at that source and it's not very reliable. Anthony Woods wasn't there, he only listened to his brother's stories at the fireside and we all know how stories can change over time. And this account was written after Cromwell died in 1663. That was nearly twenty years later. Charles was the new king. He hated Cromwell, Cromwell killed his dad, he executed him. We think Anthony Woods might have added bits in.

As can be seen, before even attending to the details in the account, Gavin built up a sourcing profile which allowed him to interrogate the content in a much deeper fashion. In his assessment of the Anthony Woods' testimony, which maintains that Cromwell ordered the massacre of innocent civilians, Gavin picks apart the account paying particular attention to the sourcing details. Noticeable is the fact that this analysis is predominantly based on the source and the context in which it was created.

In his 1991 study, Wineburg speculated that the differences in students' epistemological approaches to historical accounts could be attributed to the type of education received and argued that without the explicit teaching of the reading of historical texts through cognitive activities such as corroboration, contextualisation and sourcing, the sub-texts of historical accounts remain largely invisible to the student. The results of the post-intervention interviews, enquiries and LEUQ appear to corroborate those conjectures by finding that once particular epistemic bottlenecks were challenged and they were taught to use a sourcing heuristic, children began to apply new strategies to enable them to move beyond the predominantly Absolutist stances initially displayed.

6.5 Conclusion

The purpose of the learning trajectories was to challenge certain epistemic beliefs the children held about history; however, findings revealed that these beliefs were reinforced by deeper ideas about how the world works. Central to affecting conceptual change about history, therefore, was the disruption of these deeper ideas. The use of carefully chosen analogies, based on the children's everyday experiences, were essential to this process of conceptual re-orientation. This re-orientation was

first evident during the intervention stages and was confirmed by the outcomes of the post-intervention interviews and enquiries. It was also further supported by the significant shift in epistemic stances seen in the LEUQs.

Significant too was the variation in children's thinking. For some children, like Gavin, Róise, Danny and Sofia, the asking of a conceptual question was often enough to begin the process of epistemic shifting. For these children, conceptual change appeared to occur rapidly but for others, like for example, Daire (Cycle 2), this process took considerably longer. Daire, like a number of children, displayed very strong Absolutist tendencies in the LEUQ and pre-intervention interview. These children struggled initially with making the connection between the activities and the learning of history.

The conceptual analogies successfully challenged the children's common-sense thinking about issues such as the existence of multiple perspectives in everyday situations. However, when asked to connect this specifically to the study of history, some were unable to do so because their beliefs about the subject were so deeply embedded. It is quite interesting to note that the domain-general beliefs the children held appeared easier to shift than the idea that the same can exist in the discipline of history. In this respect, the epistemic bottlenecks worked to block them from progressing further and bringing that understanding to a new context proved almost impossible. This suggests that domain-specific epistemic beliefs may be more entrenched and harder to shift than domain-general ones.

The Explication phase of the Analogical Conceptual Change Model was of particular benefit to students like Daire, and interestingly, he began to use this strategy independently during the post-intervention enquiry. Notable was the fact that Daire drew on previous analogic activities to try to explain a shift in his thinking. Initially, some of his thought processes came out as rather garbled and references to "optical illusions" and "Vikings" seemed, on the surface, incomprehensible and completely unconnected to the Cromwell enquiry he was working on. However, retrospective analysis of his comments showed that Daire was, in fact, reflecting on the material he had encountered during the intervention, and while he lacked the vocabulary to articulate his thinking, a conceptual shift was happening. Central to shifting children's thinking, therefore, is to identify and then target these troublesome bottlenecks. Learning trajectories, which consist of three central components, a learning goal, a set of learning tasks, and empirically strengthened hypotheses (Simon, 1995, Clements & Sarama, 2010) about the thinking, knowledge and skills

that students are liable to display when learning history, offer considerable potential as a scaffold in developing students' conceptual understanding of the discipline.

CHAPTER SEVEN: TOWARDS A LOCAL INSTRUCTION THEORY FOR HISTORICAL EVIDENCE

7.1 Introduction

This chapter begins with an overview of the relationship between the HLT and the ACCM and how these contributed to the development of the LIT. This is then followed by a detailed account of the Analogical Conceptual Change Model. An explanation of the local instruction theory for using historical evidence is then given. The HLTs that contributed to the development of a series of exemplary activities are also discussed. The chapter concludes with an explanation of four design principles that emerged from the study.

7.2 The relationship between the HLT, ACCM, LIT and the design principles

The HLTs used in Cycle 1 contained a series of learning goals, learning activities and conjectured pathways that were devised to challenge the epistemic bottlenecks the children held about history. These bottlenecks were identified in the literature and confirmed during the analysis of the semi-structured interviews and enquiries conducted before each cycle. As the purpose of the HLTs was to shift children's conceptual understanding of history, a modified version of Stepan's CCM (1996) was incorporated to provide the pedagogical steps for delivering the content (see Table 6.1 for the modified steps). This modified CCM was used to inform the design and sequence of the pedagogical approaches used in the development of each HLT. Through retrospective analysis of the children's engagement with the activities, the HLTs underwent a series of revisions, eventually becoming HLT3. Using HLTs as tools to explore children's thinking contributed to further modifications of the CCM. Both the HLT and the CCM were continuously modified during the three cycles of the research leading to the development of the ACCM. The final iteration of the HLTs (HLT3) resulted in a set of empirically tested, exemplary activities that contributed towards the development of a local instruction theory. A local instruction theory concerns both the process of learning and the means designed to support that learning. The ACCM provides the pedagogical strategies for the LIT and the final HLT provides the content. The relationship between the constructs is highlighted in Figure 7.1

There are a number of differences between a HLT and an LIT. A HLT can be considered as a short instructional sequence of a small number of activities that can be used in a classroom on a daily basis whereas the LIT is comprised of the whole

sequence or framework. The LIT arising from this study is comprised of all four empirically tested HLTs from Cycle 3. Another difference between the two is the fact that HLTs are enacted within particular classrooms whereas an LIT informs instructional settings. Nickerson and Whitacre (2010) explain that the differences between LIT and HLT is two-fold: “One distinction is the duration of the learning process and the other is the situatedness in a particular classroom” (p. 228).

Gravemeijer describes the LIT as a sequence of exemplary activities for a teaching a specific topic. This constitutes one element of the local instruction theory for using historical evidence in primary classrooms and the final HLT3 is an empirically-tested sequence of concepts and exemplary instructional activities. As well as providing exemplary activities, the LIT also provides a theoretical foundation for the most noticeable characteristics of the sequence in order to explain how the intervention is projected to work. The design principles constitute another element of the LIT by establishing the theoretical yield of the local instruction theory. This helps both teachers and future designers to adapt or fine-tune the instructional activities to suit their particular situation (De Beer, Gravemeijer & van Eijck, 2018).

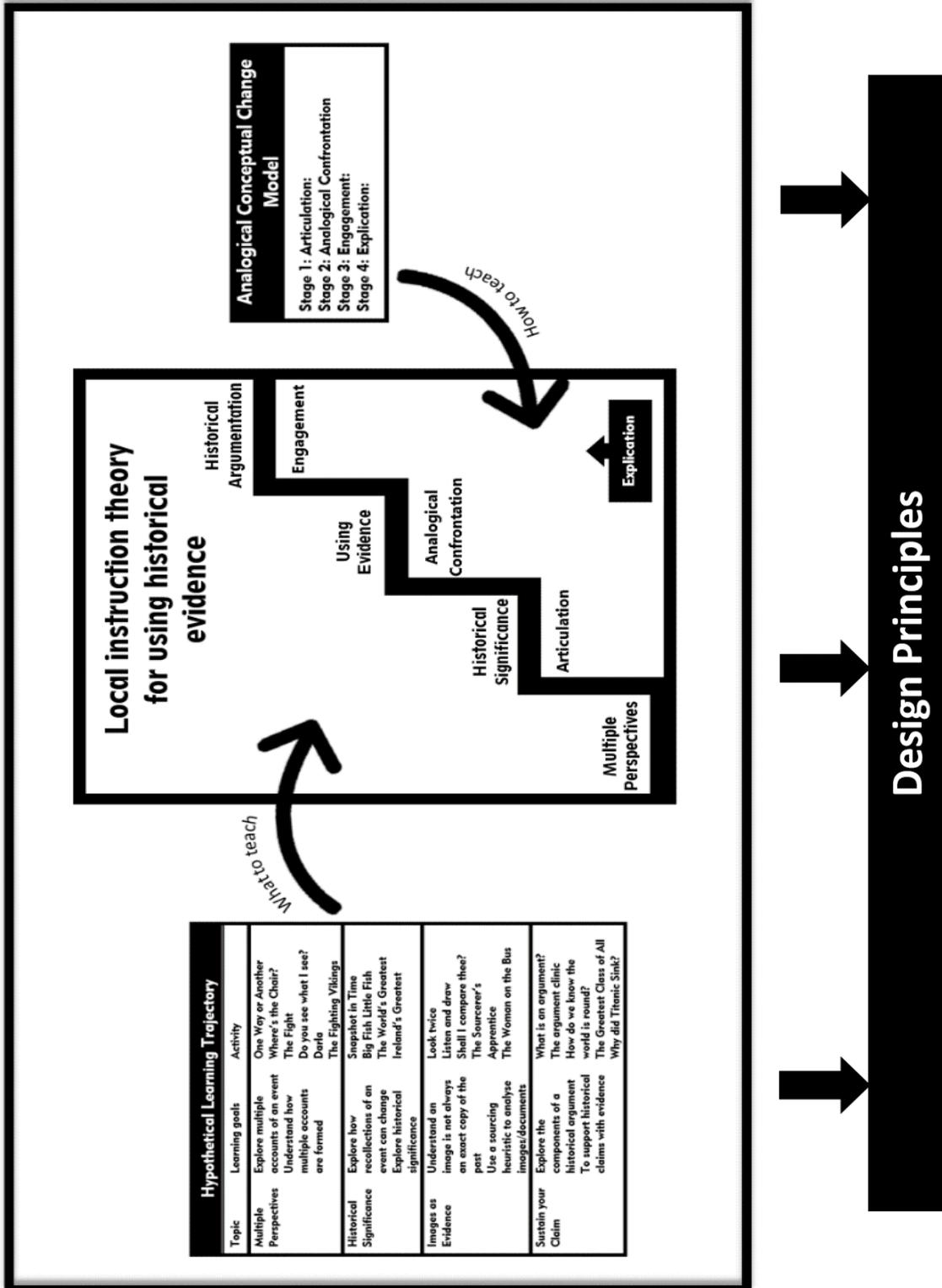
7.3 Analogical conceptual change model

This study did not set out to examine the role of analogy-based learning in the history classroom; however, both the in-cycle daily analysis of the teaching interventions and the retrospective data analysis at the end of each cycle suggested that the use of well-chosen analogies had a sizeable role to play in challenging primary children’s epistemic beliefs about history. Analogy is often used as a pedagogical tool in the teaching of historical content but the findings of this study suggest that it can also function as a cognitive foundation to build an understanding of the nature of the discipline. This understanding can play a part in fostering in students a recognition of the constructed and interpretative aspects of history.

Although the use of analogy in the history classroom is a well-established practice, little research has been conducted in this area (van Straaten, Wilschut, & Oostdam, 2016). Of those studies that have been conducted, the focus has concentrated on instructional explanations of substantive concepts such as “democracy” or “republic” (see McCarthy, Young & Leinhardt, 1998) or more commonly, on explanations of events of the past through modern-day examples (van Straaten et al., 2016; Boix-Mansilla, 2000). One of the drawbacks identified with the use of analogies in this manner is the potential for presentism. Presentism may be

defined as the tendency to see history “through our own eyes rather than those of people in the past” (Barton & Levstik, 2008, p. 228).

Figure 7. 1: Relationship between ACCM, HLT & LIT



Harrison and Treagust (2006) refer to analogies as “two-edged swords” (p. 11) in that they can contribute towards the development of conceptual understanding but if not handled with care, can lead to alternative or incorrect conceptions. Duit, Roth, Komorek and Wilbers (2001) also argue that ineffective use of analogies can impede rather than support conceptual change. Ineffectual use of analogies in history, especially those centred on using modern examples to explain past events, can contribute to a presentist view of the past in which the deeds of historical actors are viewed as nonsensical and incomprehensible. Effective use of analogy, on the other hand, can promote conceptual understanding (Glynn, 2007).

To identify what constitutes an effective use of analogy, it is important to consider what analogy is, how it assists in learning and what types of analogy work best in the classroom. The purpose of an analogy is to help explain or clarify difficult-to-understand concepts by creating a comparison between two domains of knowledge, one of which is familiar to the learner and one which is not (Orgill & Bodner, 2004). The familiar domain is usually referred to as the base domain and the unfamiliar one is referred to as the target (Gentner, 1983). Both domains have some features in common and it is this that constitutes the analogical relationship. There are two kinds of commonality that the base and target may share, surface properties such as appearance (e.g., a real cow and a plastic cow) or structural properties which focus on function (e.g., a plant and a human). Some researchers argue that analogies work best when based on deep features such as structural properties as they often provide greater explanatory power (Gentner, 1989). According to Orgill and Bodner (2004), the strength of an analogy lies not so much in the number of commonalities between the base and the target but in the overlap of relational structure between the two.

The analogies I designed for this study are focused on enacting conceptual change in regard to the children’s epistemic bottlenecks rather than substantive content. As discussed in Chapter Five, the relationship between these bottlenecks and children’s common-sense ideas about knowledge are both logical and strong. Donovan, Bransford and Pellegrino (2010) argue that beliefs that have their origins in children’s common-sense ideas are particularly problematic because what works very well in day-to-day contexts can become an obstacle when dealing with formal disciplines unless they are challenged. In view of this, I decided to use a series of conceptual analogies that were couched in everyday experiences that were familiar to the children. The analogies selected were designed to expose, and then challenge,

children's deeper conceptions on the nature of knowledge in order to transfer new understandings to the study of history.

During Cycle 1 of the study, Stepan's Conceptual Change Model (1996) was used to assist in the design and implementation of the activities included in the HLT. It became apparent, midway through the cycle, that this model was not strong enough to challenge children's deeply held beliefs about history. The children's history journals, which were completed following each activity, revealed that some children were not connecting the activities specifically to the study of history. In contrast, the non-historical conceptual analogies were proving effective in challenging children's everyday beliefs. For example, the conceptual analogy "The Fight" was especially successful in initiating cognitive disequilibrium around the existence of multiple interpretations of the same event.

One of the inherent strengths of DBR as a research methodology is its flexibility. Driven by pragmatic assumptions, this flexibility allows the researcher to adapt or change activities and/or theory even while engaged in the process of data collection. This fluidity renders DBR a powerful methodology for use in educational research because it allows the researcher to make appropriate changes as and when needed yet this is a feature of DBR "has been under-played in design experiments" (diSessa & Cobb, 2004, p. 78). The finding that the modified Stepan's model, though useful, was not sufficient to challenge the children's preconceptions of history, was offset by the finding that the initial analogies used in HLT1 were effective in affecting conceptual change. I decided to combine the use of conceptual analogies with the more successful elements of the modified Stepan's model and this led to the development of a new conceptual change model that guided subsequent teaching interventions.

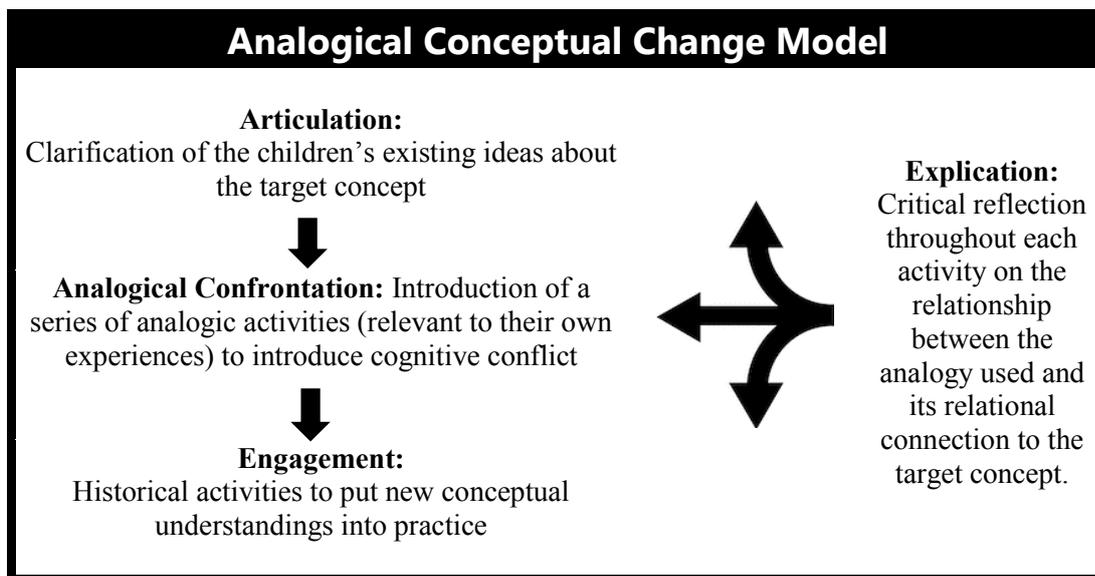
The initial strategies, identified during Cycle 1, were developed and tested during Cycle 2 and thematic analysis of the children's discourse provided evidence that these contributed towards enabling conceptual change. The results of this analysis can be seen in Table 6.6. Cycle 2 confirmed the effectiveness of these strategies and this led to the formulation of the Analogical Conceptual Change Model (see Figure 7.2). This model has four phases which include:

- Articulation (where children discuss their ideas about the concept under consideration in response to a trigger question. For example, can there be two different accounts of the same event if no one is lying?).

- Analogical Confrontation (in which epistemic beliefs, for example, there cannot be multiple interpretations of the same event) are challenged through a series of analogy-based activities).
- Engagement (the application of new understandings to a historical topic related to the concept).
- Explication (connecting the conceptual analogy specifically to the study of history).

Following the retrospective analysis of the HLT from the first cycle, it was decided to build the fourth step of the Conceptual Change Model into the discussions at the end of each activity rather than leaving this stage until the end of the HLT as originally planned. The Analogical Conceptual Change Model, as outlined in Figure 7.2, was used to support the pedagogical principles that underpinned the teaching during the HLT and the subsequent Local Instruction Theory for using historical evidence.

Figure 7. 2: Analogical Conceptual Change Model



7.4 Research question 2: What approaches can support overcoming these epistemic bottlenecks?

This section reports on the approaches that successfully worked to interrogate and re-orient the epistemic bottlenecks encountered by the children in this study, and in doing this, the second research question is also answered.

7.4.1 Local instruction theory for using historical evidence. Local instruction theories and learning trajectories have been identified in this study as effective constructs to overcome epistemic ideas that impede on historical understanding. The local instruction theory outlined in this chapter is founded on the premise that children's epistemic beliefs can be re-orientated through specific epistemic-focused interventions designed to foster conceptual change. Four HLTs were empirically tested over three design cycles and these were then mapped on to the emerging local instruction theory. As can be seen from the diagram below (Figure 7.3), the local instruction theory is guided by these four learning trajectories, each focusing on a particular concept that contributes towards an epistemic understanding of historical evidence.

The pre-intervention interviews, enquiries and LEUQs indicated that the majority of the children displayed an Absolutist stance in regard to historical knowledge. Such a stance is often characterised by a view of knowledge claims as being either right or wrong (Kuhn & Weinstock, 2002) and building on from this belief, many of the children believed there could be only one version of history. As discussed in Chapter Six, the ability to construct or refute a reasoned historical argument largely depends on the capacity to acknowledge the existence of alternative or multiple perspectives. Therefore, challenging this particular bottleneck became the pillar upon which the first HLT was built.

The second HLT on historical significance was designed to begin deconstructing the idea that history and the past are the same. The subsequent trajectories supplemented this by focusing on the role of evidence and interpretation. The third HLT introduced specific strategies to allow children to critically engage with historical evidence. As was indicated in the analysis of the pre-intervention instruments, many of the children viewed historical evidence simply as repositories of information so a sourcing heuristic named ICEACT was designed specifically to address this. Furthermore, the children also demonstrated an incomplete understanding of argumentation and the final HLT addressed this by introducing activities to develop an understanding of the process of historical argumentation. The pedagogical strategies to overcome these bottlenecks, which were derived from the Analogical Conceptual Change Model, are located below each step in the diagram and each unit has a series of exemplary activities to accompany it.

The local instruction theory presented here was formed in response to the retrospective analysis of the children's interactions with the activities from the HLTs.

Learning trajectories are often misinterpreted as being stage-like in structure; however, stage theories are strictly hierarchical and propose that children must master the components of each level before moving to the next. As Confrey et al. (2019) point out, learning trajectories are not based on linear progressions but are recursive in nature. Dunphy et al. (2014) argue that learning trajectories should be viewed as provisional because the paths that children’s learning can take are varied. They note that conceptual development is not linked to age but rather to engagement in rich activities and contexts that contribute to learning. Learning trajectories, rather than being prescriptive, aim at “expected probabilities” in children’s thinking (Confrey, 2012, p. 10). The strength of learning trajectories lies in the predictability of many of the obstacles children are *likely* to encounter and this predictability allows for their use in assessing understanding and informing future learning.

Figure 7. 3: Local Instruction Theory for Using Evidence



Confrey et al. (2019) use the metaphor of a climbing wall rather than a series of steps to describe learning trajectories and, in doing so, highlight the number of starting points and a variety of paths that students may take. These paths contain predictable footholds that students may use to reach a conceptual understanding of a particular concept. As their metaphor highlights, some paths are more challenging than others and some have more conceptual obstacles. Although the diagram above uses a series of steps, thus implying a step-by-step approach, it is designed as such for the purpose of clarity and readability. The inclusion of the bi-directional arrow indicates the recursive nature of the learning trajectories embedded within.

Learning trajectories are not without detractors and have been criticised for being overly prescriptive rather than descriptive. While Empson (2011) is right to caution that "too tight a focus on learning trajectories may lead us to oversimplify or ignore critical drivers of learning associated with the teacher" (p. 572), as Gravemeijer, Bowers and Stephan (2003) point out, trajectories are tools or guidelines that can be used by the teacher "to construct their own HLTs on a day-to-day basis" (p. 64). For learning trajectories to be considered useful for teachers (the anticipated audience), they will need to unpack and adapt them in consideration of their unique contexts in terms of classrooms and learners.

7.4.2 HLT for using multiple perspectives. As

was discussed in Chapter Four, a series of four HLTs were developed for using historical evidence in the classroom. These trajectories were comprised of a number of learning activities that were trialled and retrospectively analysed based on whether the conjectures of the activity were met under classroom conditions. HLTs "begin with what students bring to their early understanding of target concepts, and identify landmarks and obstacles students are likely to encounter as they proceed from a naive to a more sophisticated understanding" (Confrey, Gianopulos, McGowan, Shah, & Belcher, 2017, p. 718). To support students in constructing more sophisticated ways of reasoning, exemplar activities are developed. A selection of exemplar activities from the Learning Trajectory on Multiple Perspectives can be seen in Figure 7.4 (The full trajectory can be found in Appendix L).

A number of difficulties and preconceptions were identified in the literature but I aimed to focus on seeing these from the children's perspective rather than my own. I achieved this by interviewing the children and by careful observation of them engaged in historical enquiries. Such understanding allowed me to design, develop and test a series of instructional activities designed to overcome the bottlenecks that

had been identified. The instructional activities presented in this excerpt of the final HLT on multiple perspectives (Figure 7.4) are based on patterns in the children’s understanding of the concepts related to historical evidence and contain approaches that aim to support their learning.

Figure 7. 4: Activities from learning trajectory for multiple perspectives

Lesson 1: Multiple Perspectives

Learning goals

- To explore multiple accounts of an event
- To understand how multiple accounts are formed

Starting points

This activity allows the children to explore the nature of sources in history with particular reference to conflicting sources of the same event. In the interviews and questionnaires, the children saw history quite simply as “the past” or a series of facts. As outlined in the framework of the learning trajectory, this lesson begins with uncovering and challenging current epistemic beliefs.

Activity 1: One way or Another

Teacher asks the children

- Are two different accounts of the same event possible?
- Can there be two versions of the same historical event?
- Can stories change over time?
- Can memories change over time?

Conjectured responses:

- At least half of the students will recognise there are two sides to a story
- Most students will consider that there is only one version of a historical event
- Most children agree that stories cannot change over time
- Most children agree that memories cannot change over time

Linking to history through discussion

History is about interpretation and there are many interpretations of historical events.

Activity 2: Where’s the chair?

Teacher reads a list of words that all fit into a certain category (for example: seat, couch, stool, recliner, sofa, bench, pew, throne, car-seat, settee.) and then asks the students to write down as many words as they can recall immediately after. The word “chair” is never included in the list but it is the target word - it is a word that fits perfectly into the category, but it not included in the list. Later, the lists are checked.

Conjectured Responses:

- The majority of the students will include “chair” on their list and insist that it was said.
- Students can explain why the list was remembered incorrectly

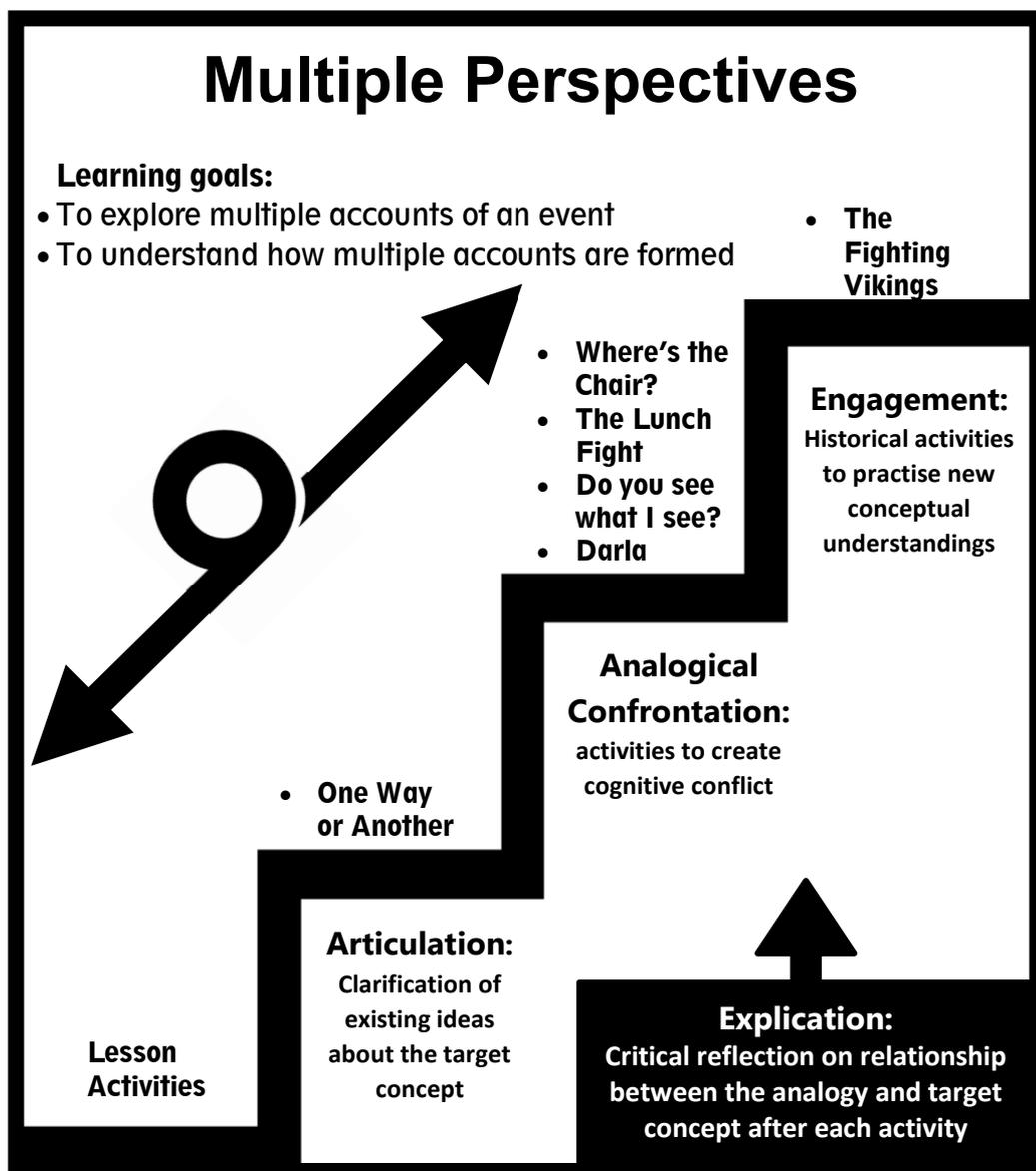
Linking to history through discussion

This is important to remember when we are looking at sources of information. Sometimes stories and memories can change over time so when studying history, we need to check when the source was created. Was it soon after the event or much later?

Figure 7.5 shows how the HLT for multiple perspectives is mapped on to the pedagogical practices from the ACCM to form the local instruction theory. The first pedagogical practice Articulation is concerned with questioning the validity of current epistemic beliefs and involves children discussing their current conceptions. The activity “One Way or Another” questions whether there can be different stories about the same event if no one is lying. The purpose of this activity is to have children articulate their own thoughts on the topic at hand. If that thinking is in line with the learning goals of the activity, then the subsequent activities will affirm and strengthen children’s thinking; however, if there is a misalignment, declaring current conceptions positions the student for the process of epistemic shifting.

The next pedagogical practice is Explication and this involves the student relating the initial epistemic question to history in particular. This process of connecting the activity to history is used at the end of each activity. This is a particularly important aspect of the trajectory as the retrospective analysis of Cycle 1 showed that while the children enjoyed the activities, without connecting them explicitly to the study of history, it remained just a “fun thing to do”. When the Explication strategy was embedded in each activity during Cycle 2 and Cycle 3, the children’s conceptual shifting occurred more easily.

Figure 7. 5: HLT for Multiple Perspectives



The following strategy, Analogical Confrontation, challenges the epistemic belief (in this case, the belief that there cannot be multiple interpretations of the same event) through the use of carefully selected analogies. The unit begins with non-historical examples to challenge the everyday thinking that may inform such epistemic beliefs in the first place. The first of these, “Where’s The Chair?” creates cognitive disequilibrium by allowing children to experience a situation where multiple accounts of the same event are formed during a shared class game.

Following this, the “Lunchtime Fight” analogy allows the children to consider the implications of multiple accounts and how perspectives play a part in how these are formed. To cement this, another analogic activity, “Do you see what I see?” targets the epistemic belief that there cannot be multiple interpretations of an event. This involves the children looking at a series of optical illusions. This activity allows the children to experience at first-hand how people can interpret evidence in a variety of ways. The final activity, Darla, uses a clip from the children’s movie *Finding Nemo* (Stanton et al., 2003). The children discuss the character Darla, who is portrayed as a “fish killer”, and then retell the event from her perspective. Activities such as these can create epistemic disruption, particularly when they conflict with the children’s answers to the original epistemic questions asked in the Articulation Stage. This cognitive disequilibrium has the potential to generate a sense of confusion as the child realises their initial ideas need modification. It is this epistemic disruption that allows the process of epistemic change to begin.

The final strategy, Engagement, allows the children to apply their new understandings to a historical enquiry. For example, building on the activities relating to multiple perspectives, the Fighting Vikings activity provides the children with two historical sources about the Vikings. One is an account from an Arab trader who viewed them positively and the other is from an Irish monk who feared them. Rather than dismissing one account as being incorrect, the conceptual analogies assist children in realising the difference in the accounts is a matter of perspectives. This allows them to read evidence in a more critical fashion and understand how the multiple interpretations of an event are formed.

7.5 Design principles emerging from the study

Design-based research aims to “make explicit the implicit decisions associated with a design process, and to transform them into guidelines for addressing educational problems” (Plomp, 2013, p. 22). Plomp refers to this as “the twofold yield of design

research” (p. 23). These “guidelines” or “heuristic principles” (p. 29) are often described as design principles.

There are, as (Bakker (2019) outlines, a multitude of interpretations for the term. They have been conceptualised in design-based studies as predictions, criterion, values, heuristic advice or as guidelines for the methodological process of design. Sometimes, the design principles to emerge from a study are a combination of all the above. As Plomp (2013) points out, design principles may support subsequent researchers in the selection and application of the most appropriate knowledge for future design-based studies. This is the first research of its kind to be conducted in Irish primary history classrooms and as a result of this, a number of design principles were identified which may be of use to future researchers. The design principles can also form one element of the LIT by providing substantive knowledge about some of the essential features that contribute to the success of the intervention itself.

Four design principles were identified in this study. The first two may be considered as pedagogical guidelines and the final two can be described as domain-specific strategies. The results of this study indicate that these design principles, when used with targeted scaffolding through epistemologically informed teaching, were particularly effective in allowing children to engage with historical evidence. As demonstrated by their engagement with the post-intervention enquiries, children, when given supports such as sourcing heuristics and the space to pose and reflect on critical questions through enquiry-based practices can begin to challenge some of the epistemic bottlenecks they hold about history. The following section outlines the four design principles.

7.5.1 Design Principle 1: Domain-specific language should be explicitly taught. “The past is a foreign country” (Hartley, 1953, p. 9) is a quote often used to sum up the complexity of the study of history; it calls for knowledge of the language of a foreign world; of a foreign people and of foreign places of which those in the present have no personal knowledge. van Drie and van Boxtel (2008), in reference to this complexity, call for explicitly teaching the substantive concepts (terms such as democracy or republic) of history to students as a means of shaping historical reasoning in whole-class discussions. While explanation of substantive concepts did form a small part of the HLTs for this study, it would appear that, at primary level, there is pressing need to teach students the historical vocabulary that allows for the expression of complicated thought patterns before, or at least in tandem with, content-specific terminology. The HLTs were successful in building the beginnings

of a disciplinary-specific linguistic toolkit as evidenced from the dialogue the children engaged with when exploring historical sources and engaging in the construction of historical arguments (see Appendix N for examples).

During the retrospective analysis of the teaching interventions in Cycle 1, it was noticed that the children's discourse was being shaped by the activities they were engaging in. Through a combination of engagement with the materials, observation of the teacher modelling historical language and whole-class discussions, the language used by the children slowly transformed from that of an everyday discourse to one specific to the discipline of history. The intervention activities exposed the children to a vocabulary which not only allowed them to discuss the issues at hand but to construct plausible arguments. They began to use words such as "context", "significance", "sources", "evidence", "claim", "argue", "primary source", "secondary source" and "perspective" to a greater extent and these acted as hooks upon which to hang their emergent capacity to reason historically. Drawing on Chapman's strategies for developing mastery of historical argument (2017), the subsequent cycles built on this finding and the language of argumentation was specifically included in the last two HLTs.

Initially, as evidenced in the King Rufus task across all three cycles, many children engaged in a weak form of historical argumentation without any sense of purpose or evidence to back up claims; however, repeated exposure to the language of history saw them begin to challenge each other in a more focused manner. In the post-intervention enquiry on Oliver Cromwell, the children actively listened to each other's propositions, considered them and then presented an argument to either counteract or confirm what was said. In doing so, they made use of the new terms they had encountered during the interventions. The interventions, therefore, were instrumental in providing the children with the historical discourse needed to articulate their ideas about history in which in turn enabled them to put a voice to their historical thinking.

In order to engage children with historical learning, they need to understand the academic language it requires. The study of history already places linguistic demands on students due to a heavy reliance on texts and accounts. Teacher modelling of the use of subject-specific language and embedding language learning tasks into children's experiences of history contributes to the development of a domain-specific vocabulary bank. Knowledge of subject-specific language can assist students in comprehending all forms of evidence and can assist them in discussing

issues such as the positionality of the source and the perspective of the author. Consideration of such issues can lead towards the construction of a reasoned argument about the veracity or reliability of the account.

7.5.2 Design Principle 2: provide opportunities to engage in collaborative dialogue. While supplying children with the vocabulary central to historical discourse provides them with a language to discuss historical events, allowing them the space to do so is equally important. Dialogic talk was identified in this study as an important factor in developing children's epistemic beliefs about historical knowledge. Wegerif (2013) defines dialogic talk as a type of talk that is exploratory in nature. It is not a discourse based on "winning or losing" an argument but an exploration of ideas in an effort to reach a deeper understanding. Central to Wegerif's definition of dialogic talk is engagement in exploratory talk. Exploratory talk is a critical but constructive engagement with each other's ideas. When children engage in exploratory talk, statements and suggestions are challenged and counter-challenged and alternative hypotheses are offered and justified (Wegerif, Mercer, & Dawes, 1999).

Analysis of the pre-intervention enquiries revealed that the children rarely engaged in this type of talk and the conversations were characterised by what Mercer (2008) labels as *disputational talk*. Concurrent with Mercer's view, some children exhibited a *disputational* approach in which the views of the others were largely ignored and though the children tended to share and build information, it was done so in an uncritical manner. A number of children displayed a more acquiescent approach where they simply agreed with whatever hypothesis was proposed. The post-intervention enquiries saw increased engagement in exploratory talk and on numerous occasions, collaborative dialogue allowed the children to tease out questions raised and critically examine each others' knowledge claims. The epistemological nature of the discussions, which for the most part, were student-initiated and student-led, contributed to the development of sophisticated epistemic thinking on the nature of knowledge.

Engaging in collaborative dialogue when discussing historical issues, and especially when conducting the end-of-unit historical enquiries, allowed the children to appreciate that questions they pose may have a variety of solutions. It also allowed them to explore differing perspectives, offer counter-arguments and revise their initial arguments. As Wegerif (2012) argues, if students can change their minds "it must be because they are identifying in some way with the process of the dialogue

itself and the ideal of truth which it generates” (p. 9). This “changing of minds” was particularly evident in the post-enquiry discussions the children had in Cycle 3 where a number of children were swayed from their initial position as a result of the dialogic interaction with others.

Hogan, Nastasi and Pressley (1999) argue that significant cognitive gains are made when students engage in collaborative dialogue, especially when constructing or defending their own arguments. A similar finding was made more recently by Kuhn and Crowell (2011) though the studied population was much older. The results of this study both corroborate and add to these findings by proposing that whole-class dialogue, where students are given the space to discuss and reflect on epistemic issues, can lead to gains in argumentative reasoning. As was seen by the children’s engagement with the post-intervention enquiry on Cromwell, the arguments and counter-arguments put forward displayed sophisticated epistemic thinking that was more characteristic of an Evaluativist position.

Brownlee, Walker, Johansson, Scholes and Ryan (2018) point out that classrooms which are dialogic in nature have an epistemic culture in which teachers encourage children to listen to, identify, and resolve different points of view within a classroom through a process of argumentation. This has a number of implications for pedagogical practice in the history classroom and highlights the importance of providing students with real talk-time rather than listening to teacher-directed talk. In dialogic history classrooms the focus should remain on the generation of historical questions, the space to listen to and/or refute opposing arguments and the opportunity to craft and develop evidence-based arguments.

7.5.3 Design Principle 3: Embed sourcing heuristics into teaching. As discussed earlier, one of the epistemic bottlenecks children encountered was an incomplete understanding in regard to the process of constructing a historical argument. In fact, for many of the children, the process of argumentation rested on the belief that arguing was “a shouting match” and winning an argument involved “getting the last word in” or “shouting the loudest”. These beliefs were, for the most part, informed by the children’s everyday experiences of disagreements with others and the influence of these ideas was evident when children were arriving at conclusions at the end of the pre-intervention historical enquiries. In many cases, the person with either the loudest voice or the most insistent contradictions constructed the final analysis and the rest of the group followed their lead, irrespective of how implausible that analysis was. Notable was a lack of reference to using evidence to

back up warrants and claims or the use of alternative strategies to refute a point. The incomplete understanding of an argument affected the children's ability to construct a historical argument and this, coupled with their approach to historical evidence, resulted in fanciful claims that were rooted in the children's own imaginations rather than the evidence before them.

Once the children had been given a specific support through the introduction of the sourcing heuristic ICEACT, their level of critical engagement with the historical evidence rose. The heuristic allowed the children to interrogate evidence in a more comprehensive manner and was effective in scaffolding their approach to historical evidence. It also provided concrete strategies to allow children to deal with conflicting narratives. In the pre-intervention enquiries these conflicts in the evidence were largely (but not always) ignored or glossed over whereas post-intervention the children actively engaged with them using strategies such as corroboration, contextualisation and positionality.

The ICEACT scaffold also allowed children to move beyond the "repositories of information" concept of historical evidence and allowed them to consider source details as being pertinent to the analysis of the evidence. The majority of the children across all cycles explicitly named the author and date of the sources and made efforts to evaluate the positionality of the author/creator during the post-intervention enquiries on Oliver Cromwell. This also allowed the children to consider issues such as whether the author was present at the event and how trustworthy the source was, issues that had not been given any consideration in the pre-intervention enquiries. This design principle shares similarities to one of the principles highlighted in a recent DBR study on disciplinary literacy undertaken by Monte-Sano, Hughes and Thomson (2019). They argue, drawing on previous research, that making visible the "moves" made in interpreting historical accounts allows students to make sense of how arguments are constructed.

7.5.4 Design Principle 4: Provide authentic activities through enquiry-based practices. One of the strongest outcomes of this study is that student epistemic beliefs about history have a discernible influence on their understanding and approach to historical evidence. Employing Kuhn and Weinstock's developmental model of epistemic knowing (2002), a spectrum of student beliefs were identified. Beliefs around the certainty of knowledge ranged from a naive stance where knowledge is viewed as either being right or wrong to a more "sophisticated" view where multiple perspectives are considered. The results of the

LEUQ indicated that most participants from Cycle 2 displayed an acknowledgement of the uncertainty and changing nature of knowledge and the interviews revealed an awareness that historical knowledge has the potential to evolve as new evidence or interpretations emerge. In contrast, many children in Cycle 1 and 3 appeared to view knowledge as both certain and objective and saw historical knowledge as grounded in historical facts which were immutable and absolute. In their study of high school science students' beliefs about the nature of science, Mason, Scirica and Salvi (2006) attributed the prominence of such beliefs to a science curriculum that portrayed scientific knowledge with absolute certainty. The findings of Mason et al. (2006) may help explain the discrepancy between the children from both Cycle 1 and 3 and those from Cycle 2. The fact that many of the participants from Cycle 2 expressed more mature beliefs concerning the nature of historical knowledge may, in part, be due to their engagement with open-ended, enquiry-based learning rather than the typical textbook-led instruction.

Furthermore, children from the second cycle, who had experience of the methods historians use when engaging in historical enquiry, were far more likely to refer to the interpretative nature of history and referenced evidence and historical arguments as key methodologies in the “doing” of history. Though there was a variety of naive approaches to the historical enquiry evident in Cycle 2, these children were far less likely to rely on external authorities to acquire knowledge and far more liable to self-construct knowledge by actively evaluating information when provided with opportunities to do so. In contrast, the children who experienced a textbook-led curriculum tended to reiterate the content of the sources, the facts contained within, rather than construct answers themselves. The findings of this study underline the benefits that exposure to pedagogical practices such as enquiry-based learning can have on the development of epistemic beliefs.

7.6 Conclusion

This chapter presented the significant outputs that arose out of this DBR Teaching Experiment. These include the development of a new conceptual change model, a local instruction theory for using historical evidence, a series of HLTs to support the local instruction theory and four design principles to assist researchers and teachers in the design of subsequent trajectories. This chapter also attended to the second research question by identifying the LIT and HLTs as effective approaches to challenge and interrogate children's epistemic bottlenecks about historical evidence.

In Chapter Two, it was hypothesised that a framework which incorporated challenging the epistemic beliefs peculiar to the discipline of history would move the children along a trajectory away from an Absolutist (or Copier) outlook and towards a more Evaluativist one. As indicated by the results of the post-intervention data, this hypothesis was well-founded. The children emerged from the intervention with a deeper, more comprehensive view of history and how historical knowledge is constructed and regularly used sophisticated epistemic thought patterns to make sense of historical evidence. These thought patterns had an effect on the children's capacity to engage with historical sources and influenced how their investigation of the past was tackled.

The HLTs and the subsequent local instruction theory, were empirically tested as a means for enacting epistemic change. The LIT is comprised of four trajectories that focus on the main epistemic bottlenecks uncovered during the pre-test interviews, enquires and previous research. The trajectories themselves do not cover every aspect of each construct but they do provide a basis from which to begin the process of conceptual understanding. For example, the trajectory on significance focuses on breaking down the idea that history and the past are synonymous with each other and pays particular attention to highlighting that history is an interpretation of selected events from the past. Issues such as who is remembered and why, though important, did not feature in this trajectory. The same holds for the other second-order constructs of multiperspectivity, using evidence and argumentation.

The ACCM, which uses conceptual analogies, proved effective in causing epistemic disruption and led to new forms of thinking. Examining historical concepts from a variety of perspectives (i.e. moving from everyday examples of multiple perspectives to specific historical examples), appeared to cement such thinking. Traversing both perspectives resulted in a deeper, more complete understanding of the concepts that were being challenged. This has implications for the teaching of complex disciplinary concepts and suggests that teaching for conceptual change should begin with challenging the everyday assumptions children have about the concept prior to introducing discipline-specific activities. The data from all the cycles also support the hypothesis that conceptual analogies themselves are a useful strategy for the promotion of conceptual change when dealing with second-order historical concepts. It also supports the proposition that once everyday ideas are articulated and challenged, an epistemic pathway is cleared for the teaching or modelling of explicit, domain-specific approaches to history.

This chapter also presented the four design principles that emerged from this research and these have implications for the teaching of conceptual understanding in the history class as well as future iterations of the LIT. The design principles highlighted the importance of authentic learning through enquiry-based practice which can contribute to an epistemic acknowledgement of the uncertainty of historical knowledge. Also highlighted was the importance of embedding explicit strategies into instruction. The heuristic ICEACT was used as an example to illustrate how such heuristics can scaffold children's engagement with historical evidence. Additionally, the centrality of domain-specific language and the space for dialogic interaction was emphasised. How these design principles can be operationalised as a guide for future research will be discussed in Chapter Eight.

CHAPTER EIGHT: CONCLUSION

8.1 Introduction

In the introductory chapter of this dissertation, I proposed that if educators wanted to involve children in a meaningful study of the past then more needed to be known about what children already know about history, where this knowledge originates and how it is organised and applied. This study provides an insight into these essential and important aspects of children's thinking and, in answer to calls for deeper insights into this area (Brownlee et al., 2018), offers an innovative approach to challenging the bottlenecks that can inhibit historical understanding. In this final chapter, I discuss the number of ways it makes a unique contribution to this under-researched area.

The chapter opens with an overview of the study and this is followed by an outline of the contributions it has made to history education research and other related fields including conceptual change, epistemic beliefs and learning trajectory research. The research questions that underpinned this study were answered in detail in Chapters Five (Section 5.3) and Seven (7.4), but they are briefly revisited in this chapter. This is followed by an appraisal of how learning trajectories may be employed in the context of history education in Irish primary classrooms. In articulating this, consideration is also given to the current position of history as a subject at primary level and how learning trajectories can contribute to current and future curricular discussions. As with any study, there were a number of limitations identified during the course of this research and the effect of these on the findings of this study are also discussed. The remainder of the chapter focuses on recommendations for future research, and finally, conclusions are drawn, at both a personal and a policy level, on the implications this study holds for the teaching and learning of history.

8.2 Overview of the study

Building on the hypothesis that some epistemic beliefs about history can act as bottlenecks to impede understanding, I aimed to find ways in which these could be identified, interrogated and challenged. To do this, I conducted a DBR Teaching Experiment in three Irish classrooms. An epistemic questionnaire, historical enquiries and semi-structured interviews were used to uncover children's beliefs about history and these data revealed a series of inter-connected and firmly entrenched bottlenecks that can inhibit historical understanding.

A sequence of HLTs to overcome these were designed and implemented. The learning trajectories were based on four concepts identified from both the literature and the analysis of the pre-intervention instruments. These concepts included multiple perspectives, historical significance, using evidence and historical argumentation. The HLTs adopted a modified version of Stepan's Conceptual Change Model (1996) as the theoretical underpinning to enable the conceptual shifting needed to challenge bottlenecks and progress children's thinking. In-cycle daily analysis of Cycle 1 showed this model to be ineffective in shifting domain-specific beliefs and a series of pedagogical strategies (identified in Cycle 1 and confirmed in Cycles 2 and 3) proved successful in enacting the process of conceptual change. These strategies led to the formulation of the Analogical Conceptual Change Model. The Analogical Conceptual Change Model that emerged from this research was used to underpin the design of the HLTs used in Cycle 2 and Cycle 3 of the study. The retrospective analysis that was conducted after each cycle then led to the development of a local instruction theory for using historical evidence in the primary classroom.

The results of the post-intervention analysis showed the instruction theory and the learning trajectories to be effective and the children emerged from the interventions with a much deeper awareness of the nature of history and the part historical evidence plays in its construction. The outcomes of the implementation of the HLTs are discussed in greater detail in the following section. For the purpose of readability, I have sectioned these into different areas of research: learning trajectories, conceptual change and epistemic beliefs research; however, it is important to note that these findings contribute as a whole to the field of history education.

8.3 Revisiting the research questions

The identification of a number of epistemic beliefs that act as bottlenecks to impede children's conceptual understanding of the discipline both corroborate the findings of previous studies that have looked at children's thinking in history (Waldron, 2003; Barton, 1997a; Barton, 1997c; Cooper, 1992; Lee & Shemilt, 2003; Lee & Ashby, 2000; VanSledright, 2002) and expand on them by situating this thinking within the emerging field of epistemic cognition. The development of a local instruction theory and a series of learning trajectories also make important contributions to the field as they present a novel and innovative approach to teaching history for conceptual understanding that is grounded in the "logic of the learner"

(Sztajn, Confrey, Wilson & Edgington, 2012, p. 147) rather than an adult's disciplinary expertise. The following section revisits the research questions that drove this study, and in doing so, highlights a number of ways that the findings of this study can contribute towards a deeper understanding of children's thinking in history.

8.3.1 What epistemic bottlenecks inhibit the understanding of historical evidence? The pre-intervention instruments were employed to reveal the children's epistemic beliefs about history. This data provided a rich and textured insight into these beliefs, and in particular, highlighted those that served to constrain historical understanding. Of interest was the fact that these were found to have their origins in the children's common-sense ideas of how the world works and were influenced by their domain-general beliefs about knowledge. Such ideas, formed by the exploratory knowledge they experience during the course of everyday life, may serve well in many day-to-day situations but can become bottlenecks when applied to the study of history. In the ensuing section, three overarching bottlenecks are discussed with regard to their everyday origins, their epistemic underpinnings and how they translate into student practice when doing history.

8.3.1.1 Multiple perspectives. An enduring belief that permeated all cycles was the conviction that there could be only one version of history, because, based on the children's observations of their own personal pasts, events can only happen one way. Underpinning this, from an epistemic perspective, is an Absolutist position in which multiple perspectives are non-existent as there can be only one attainable truth. From a disciplinary point of view, this epistemic belief translated into a view that history was an uncontested narrative and this impacted on how the children practised history. By viewing history as a single and fixed narrative, the role of evidence and the need for argumentation was removed. Similar to studies conducted by Barton (1997a; 1997c) and VanSledright (2002), the idea of using sources to support arguments seemed of little consequence and as a result of this interpretation of history, evidence and sources were treated as repositories of information that were mined for facts rather than interrogated. Furthermore, when confronted with conflicting accounts of a historical event, the majority either ignored the contradictions or resorted to an Absolutist view that one account was wrong. In failing to acknowledge the existence of multiple interpretations of an event, doing history was reduced to a matter of gathering information about the past or deciding between what was "true" and what was "false".

8.3.1.2 Knowledge by acquaintance. Another key bottleneck that impacted on the children's understanding of history was the belief that the past is unknowable because "we can't really know history because we weren't really there" (Katelyn, Cycle 3). Many who held this belief also proposed the transmission of knowledge through oral testimony as a reasonable explanation for knowledge of the past. In essence, this is an epistemic issue relating to the theory of knowledge an individual favours. Russell (1910) delineates such knowledge into two broad categories: knowledge by acquaintance and knowledge by description. Knowledge by acquaintance is based on empirical experience whereas knowledge by description is acquired indirectly through the interpretation of evidence.

History, as a discipline, relies on both forms of knowledge, yet the children in this study showed a preference for the former and this appeared to be based on their own encounters with the favouring of empirical experiences in everyday life. For example, when investigating a schoolyard fight, those in authority, such as teachers, often value eye witness testimony over indirect testimony. In such everyday circumstances, a "fact" can be defined as something which has occurred, has been witnessed and is open to inspection in order to be verified. However, historical knowledge, as Chapman (2011) points out, is "structurally aporetic and not autopic" in that "there is no experiential bridge (or 'poros') back to the past and autopsy (or 'seeing for yourself') is not possible" (p. 172). In the absence of oral testimony, historical facts must be established through the evidence available, yet the role of evidence, and how historians use it to reconstruct the past, was missing from many children's conceptualisations of the discipline. Without a working knowledge of the disciplinary procedures used by historians, many of the children resorted to a naive relativism when asked to consider conflicting historical evidence. Views such as this can lead to the conclusion that historians must just "be guessing or, worse, making it up" (Lee, 2005, p. 31). This view coupled with a lack of understanding around the process of argumentation in general, and historical argumentation in particular, contributed towards the use of unfounded claims that were not grounded in the historical evidence but were fuelled by the children's own imaginations.

8.3.1.3 History as the past. Another epistemic bottleneck arising from this study was that the majority of children believed history and the past to be synonymous with each other. Jenna (Cycle 2) effectively summed this up as "even the words I'm saying now are history." This conflation between "the past" and "history" centred on the everyday meaning of the word "past". While some might

argue this is a semantic or ontological matter rather than an epistemic one, this view contributed greatly to the students' beliefs about ways of knowing in history, therefore, I consider it an epistemic issue. Many students described history as the culmination of every single event, thought and action that has ever occurred since the beginning of time and believed that somewhere out there, there was a "big book" that contained a record of all this information. Accordingly, the historian's job was to sift through this material to create smaller books.

When students view history as "everything from the past" they do so with everyday conjectures about that past such as "the past cannot change" and "things can only happen one way" and fail to recognise that history is the study and interpretation of selected past events and those interpretations can and do change based on the reading of evidence. The confounding of history with "the past" also had a considerable influence on how the children distinguished between the factual aspects of "the past" and the disciplinary elements of "doing history" and this perception, in particular, removed the role significance plays in the selection and interpretation of historical evidence.

As can be seen from the three bottlenecks identified, there was considerable crossover on how these impacted on the students' understanding of the nature of history and the role of historical evidence. The children's responses to the interview questions, coupled with observation of their engagement with the historical enquiries, identified a strong association between student beliefs about history and the practices they engage with when doing history. This relationship appears to be both reciprocal and intricate in that epistemic beliefs influence practice and practice, in turn, influences beliefs. The relationship between practice and belief has implications for the teaching of history and illustrates the importance of attending to children's preconceptions about history in the history classroom. Suggestions on how to attend to these challenges are explored in the second research question which is discussed next.

8.3.2 What approaches can support overcoming these epistemic bottlenecks? As discussed in Chapter Two, current trends in the teaching of history have resulted in a shift from the mastery of content knowledge towards an emphasis on historical enquiry, historical thinking and the fine-tuning of historical consciousness. This turn in emphasis has raised new questions about how this may be accomplished in history classrooms. While internationally there is a mounting appreciation of the need for higher quality history education, there is a lesser

awareness of how this may be achieved. Gravemeier (2004), though arguing for reform in mathematics instruction, maintains that the change in focus towards children's thinking warrants a departure from the deconstruction of expert knowledge as the origin point for the design of instruction. He argues for a move towards students "elaborating, refining, and adjusting their current ways of knowing" (p. 106) and proposes local instruction theories and learning trajectories as a means of doing this. A noticeable feature of these approaches is that the focus is firmly embedded in "the logic of the learner" (Sztajn et al., 2012, p. 147) rather than that of the expert.

8.3.2.1 Learning trajectories. Learning trajectories consist of three parts: a) learning goals; b) conjectured developmental paths towards those goals; and c) empirically strengthened instructional activities matched to the thinking, knowledge, and skills that children are liable to encounter when engaged in domain-specific learning (Douglas & Sarama, 2010; Corcoran, Mosher, & Rogat, 2009). Learning trajectories focus on a particular content area, and in this study, they were designed to challenge the epistemic bottlenecks children held about history. Drawing from the extant literature and the identification of the three epistemic bottlenecks discussed earlier, four trajectories were developed to contribute towards developing an understanding of historical evidence. The first trajectory looked at the issue of multiple perspectives, the second related to historical significance, the third was concerned with modelling discipline-specific strategies for analysing historical sources and the final trajectory considered the basic components of creating a historical argument. These trajectories included hypotheses about both the sequence and the form of the steps in the growth of children's understanding as well as about the nature of the instructional experiences that can scaffold such learning.

8.3.2.2 Local instruction theories. The LIT that emerged from this research was built on the premise that in order to teach for conceptual understanding, teachers must first attend to the epistemic bottlenecks that can inhibit it. To do this, the teacher has to help students build upon their own reasoning and thinking (Gravemeijer, 2004). Local instruction theories can support classroom teachers in developing innovative instructional activities that are targeted to challenge problematic concepts students are likely to encounter (Nickerson & Whitacre, 2010). The purpose of the LIT is not to provide a step-by-step teaching sequence but to act as a frame of reference for teachers to design their own HLTs for their own particular classrooms and students (Gravemeijer & Cobb, 2013). The HLTs provide a series of

exemplary lessons that can be adapted for such use and the LIT combines these with pedagogical strategies that can be used in classrooms. These strategies draw from elements of conceptual change theory and enquiry-based learning to challenge and overcome epistemic bottlenecks students may hold.

As was found in this study, local instruction theories and learning trajectories can potentially fulfil a number of objectives; they can challenge conceptual bottlenecks; can be operationalised as a resource to design student-centred pedagogical practices and they can also work as a guide to pinpoint salient features of domain-specific understanding. Based on the successes achieved in re-orienting children's ideas and understanding of historical evidence, it can be argued that learning trajectories, may provide a comprehensive and effective framework that combines both conceptual and procedural knowledge for the teaching and learning of history.

8.4 Contributions to epistemic research

Since Perry's (1970) ground-breaking work on the development of the epistemic beliefs of third level students, there has been a wave of interest in this area as a field of research; however, to date, there has been very little research focused on primary-aged children. Few studies have addressed this and interventions that aim to promote epistemic change are extremely rare. This study focuses on that research gap, and in doing so, complements and enriches previous research on children's thinking in history, (e.g., Lee & Ashby, 2003, VanSledright, 2002) and adds to the existing findings on epistemic beliefs in general. In the following section, three findings and the implications of these for epistemic research are discussed.

8.4.1 Moving beyond multiplism and epistemic wobbling. In Chapter Two, the similarity between a number of progressional models was highlighted, of particular note, is the developmental nature of all of these models which assume that progression in thinking is something that evolves over time, moving from a naive set of thinking skills towards more sophisticated levels of critical reasoning. This developmental aspect was purposely woven into the HLTs which were designed to move children from an Absolutist view of knowledge in which knowledge is viewed as certain and objective towards a more Evaluativist approach which balances the objective and subjective dimensions of knowing. To do this, epistemic beliefs were targeted in a specific order. Absolutist thinking was challenged by the introduction of activities based on the concept of multiple perspectives and engagement with these prompted a move towards a more subjective Multiplist stance. As Kuhn, Cheney, and

Weinstock have proposed, progression towards mature Evaluativist understanding involves the coordination of the subjective and objective dimensions of knowing (2000). The sourcing activities, coupled with the activities based on argumentation, reintroduced the objective nature of knowledge and allowed children to see that some claims can be “more right” than others and that the evidence and context behind them need careful consideration.

While the trajectories were successful in moving children towards more sophisticated forms of epistemic reasoning, there were a number of issues that arose. The first of these is in relation to the recursive nature of epistemic cognition. This study found that not only is there a wide variation to the timing and appearance of certain stances but also that these can fluctuate depending on the domain and context. The movement from one position to another was not stable and children moved back and forth between stances. Hofer and Pintrich (1997) have suggested that there may be a recursive aspect to epistemic beliefs and that an individual’s epistemic stance may fluctuate particularly during times of important transitions. Likewise, Maggioni, VanSledright and Alexander (2009) have witnessed what they term as “epistemic wobbling” amongst high school students and teachers. This recursive wobbling was also seen in the children involved in this study.

The second issue relates to the introduction of relativist thinking during the interventions. The conceptual analogies used at the start of the interventions were particularly effective in establishing the idea of multiple perspectives. This led children towards a more subjective and uncertain view of knowledge and this shift appeared to happen very quickly for most. However, it also introduced a degree of relativistic thought in that a number of children articulated the belief that all historical knowledge claims are equal as everyone is entitled to their own personal opinion. While this is partially correct and people are entitled to hold personal opinions, not all opinions are equally valuable. Opinions that are grounded in fact, or in the case of history, that are supported with evidence, can be of more value than those that are not. While the intention of the intervention was to shift the children’s current epistemic position, there was a concern that some children would simply replace Absolutist beliefs with Multiplist beliefs or that existing Multiplist tendencies would be reinforced. This stance is not an ideal position for children (or indeed for anyone) to remain at because at this level all knowledge claims are seen as inherently subjective. Since Multiplism allows for the individual to construct their own personal

truths, further interpretations are considered unnecessary because all ideas or opinions are deemed equally trustworthy and justifiable (Bleazby, 2011).

These findings have a number of implications for future studies that aim to modify or change existing epistemic beliefs. Firstly, such interventions need to ensure that students are moved to think beyond Multiplistic modes of thought. In this study, students whose thinking was identified as Absolutist in character, were moved to a Multiplist stance by the introduction of the possibility of multiple perspectives. More importantly, this Multiplist thinking was further challenged by introducing strategies to allow the interrogation of historical knowledge and by the development of argumentative practices. This targeted instruction employed the developmental path proposed by Kuhn, Cheney & Weinstock (2000) and assisted most children to make the transition from Absolutist to Multiplist and from Multiplist to Evaluativist modes of thought. Secondly, both educators and researchers need to be cognisant of the fact that epistemic wobbling is likely to occur at transitional stages and particular attention must be paid to the appearance of these unstable and recursive transitions.

8.4.2 Domain-specific beliefs: more inflexible than domain-general?

Until recently, it was considered that epistemic beliefs were domain-general; however, current thinking in epistemic research is in general agreement that there can be differences in one's epistemic belief system across disciplines (Hofer, 2016; Depaepe, De Corte, & Verschaffel, 2016). The findings of this study support the argument that children's domain-specific epistemic beliefs are held in tandem with domain-general ones, and furthermore, proposes that domain-specific ones may be more entrenched and harder to shift. An example to illustrate this was the finding that many children displayed a growing awareness of the existence of multiple perspectives in everyday life and gave credible examples of how this may happen; however, when asked to connect this to history as a discipline, many reverted to a firm Absolutist position in which there is only one answer "because history has already happened" (Brad, Cycle 3). This finding has implications for future research in epistemic understanding and suggests that intervention activities focused on epistemic change need to attend to the everyday epistemologies that underpin children's thinking before attempting to challenge more deeply entrenched domain-specific ones.

8.4.3 Epistemic disruption leads to epistemic development. Analysis of the targeted instruction that underpinned this study indicated four pedagogical strategies which can be operationalised as mechanisms of epistemic change. These

strategies include articulation, analogical confrontation, engagement and explication. The use of such strategies can create epistemic disruption particularly when they conflict with the children's answers to the original epistemic questions asked. In deliberating on the disruption of these epistemic bottlenecks as a foundation for conceptual change, a significant concern thus arises in regard to how pervasive and deeply held some of these beliefs actually are and how difficult it may be to disrupt assumptions that children wholeheartedly believe to be correct.

To disrupt children's every-day, common-sense beliefs about history is, in essence, to challenge even deeper beliefs about knowledge and knowing that are taken as a given. While the purpose of the learning trajectories was to challenge certain epistemic beliefs the children held about history, these beliefs were underpinned by much deeper conceptions on how they viewed the world in which they live. In other words, this disruption was not bounded by history but transcended it. The discipline became the vehicle to allow the children to travel down less-travelled and sometimes never-travelled conceptual roads, and this journey, as the shift in epistemic stances the post-intervention LEUQs, interviews and enquiries revealed, transformed the children's thinking.

Key to this conceptual transformation was the process of epistemic disruption which provided the cognitive disequilibrium needed to unsettle student thinking. The use of carefully chosen analogies, grounded in children's everyday experiences, is integral to this process of conceptual re-orientation. This cognitive disequilibrium encourages the student to realise that their initial ideas need modification and it is this epistemic disruption that allows the process of epistemic development or change to begin. These re-orientations were first evident during the intervention stage of Cycle 1 and were confirmed by the outcomes of the student interviews and the children's engagement with the historical enquiry on Cromwell. This was further supported by the shift in epistemic stances seen in the LEUQs.

Finding that the children developed more sophisticated epistemic stances following their engagement with the intervention activities is promising as it shows that epistemic beliefs can be enhanced by targeted instruction to promote epistemic change. Also adding to the existing research base on epistemic beliefs is the finding that children as young as nine and ten can display aspects of Evaluativist thinking, aspects that, until recent years, were believed to develop only in adolescence (Kuhn & Park, 2005).

It is worth noting, however, that for some children, epistemic disruption appeared to begin with simply asking questions that prompted them to think on epistemic issues. The children's responses indicate that reflecting on philosophical questions and issues can initiate a transformation in beliefs. In a number of instances, once prompted to reflect on such issues, children began to move to more sophisticated levels of thinking. Further research will need to be conducted to verify if discussion alone can stimulate a move towards a new epistemic stance.

8.5 Contributions to conceptual change research

The results of this research show that children's epistemic beliefs can be re-orientated through specific epistemic-focused interventions designed to foster conceptual change. The identification of a series of pedagogical principles based on analogical reasoning contributed largely to the development of the Analogical Conceptual Change Model. The Analogical Conceptual Change Model makes a unique contribution to the field of conceptual change in history as it is focused on conceptual understanding rather than instructional explanations of historical terms or events. In agreement with the literature on conceptual change, this model proposes that to affect the process of epistemic change, children need to be given opportunities to discuss those prior conceptions that can act as bottlenecks to their epistemic development.

Analogies are powerful catalysts in activating change in conceptual understanding in other disciplines (for example, science), but it has been proposed that by themselves they may not be enough in affecting long term conceptual change. Clements, for example, argues that the use of analogy in isolation may be ineffective in counteracting deeply entrenched preconceptions. The strength of the ACCM is that the analogies designed for this study are also accompanied by what Clements describes as "dissonance producing situations" (2013, p. 427) beforehand and targeted historical activities afterwards. This model has been designed specifically to enact conceptual change in history and three cycles of design-based research tested its efficacy and proved it was effective when coupled with the activities from the learning trajectories.

8.6 Contributions to learning trajectory research

As was discussed in Chapter Four, one of the underlying theoretical frameworks driving the development of many local instruction theories in mathematics education is that of Realistic Maths Education (RME). RME is a domain-specific instruction theory for mathematics which originated in the

Netherlands (Jupri, Drijvers, & van den Heuvel-Panhuizen, 2014). Treffers, drawing on the results of years of design-based research conducted in the Freudenthal Institute, constructed RME as a domain-specific theory for teaching and learning mathematics for conceptual understanding. This was achieved by analysing local theories that were developed based on Freudenthal's philosophy of mathematics (Gravemeijer & Stephan, 2002).

Gravemeijer and Stephan (2002) describe RME at this stage as a "global" rather than local instruction theory for mathematics education that functions as a guideline and inspires future research. It is not a fixed theory but rather is continually shaped and concretised by successive local theories that have used its guiding features. These local instruction theories are expanded, empirically tested and modified through the process of design-based research. As Gravemeijer and Stephan's point out, "since the local instruction theories comprise newly created instances of how RME can be worked out, these local theories can, in turn, form the raw material for the construction of a more refined version of the general theory" (2002, p. 148).

Table 8.1 shows the RME principles that are often used to guide studies that develop local instruction theories in mathematics. As discussed in Chapter Four, history education research does not have such an underlying theory and so I drew on a number of existing frameworks such as Barton and Levstik's reflective enquiry (2004), Lee and Shemilt's progressions in understanding historical accounts (2004), Kuhn and Weinstock's three epistemic levels of understanding (2002), historical thinking (Lévesque, 2008), the modifications to Stepan's conceptual change model (1996) which led to the development of the ACCM and social constructivism (Bruner, 1966). This framework proved to be a successful combination in that the organising principles worked to effectively uncover and challenge the children's beliefs about historical evidence. As discussed in Chapter Seven, a series of design principles emerged from the analysis of the data. These, coupled with the findings relating to epistemology, led to this redrafting of the theoretical framework that underpinned the learning trajectories.

The principles, provided in Column Three of Table 8.1, specifically relate to those related to conceptual understanding of historical evidence. These principles may benefit and assist future researchers when using design-based research in history education studies. Focused attention on other second-order concepts in future research may identify other principles. Identification of such principles contributes

towards beginning a conversation on the development of a theory for history education that can be used to underpin subsequent learning trajectories in a manner similar to RME.

Table 8. 1: Towards principles to promote conceptual understanding in history for teaching/research

Principles of Realistic Mathematics Education	Principles guiding the HLT for using evidence	Towards principles to promote conceptual understanding in history for teaching/research
<p>Activity Principle: Mathematization refers to mathematics by doing where students can experience a similar process to that by which mathematics was invented.</p> <p>Reality principle: Children work with realistic contexts</p>	<p>Enquiry Based History: "doing" of history through using evidence to investigate historical questions. Students engage with sources using methods similar to those used by historians. (Barton & Levstik, 2004).</p>	<p>Provision of authentic learning activities through enquiry-based practices: Enquiry-based practices that are authentic in nature can contribute to an acknowledgment of the uncertainty and changing nature of knowledge and the potential for interpretations to evolve as new evidence emerges.</p>
<p>Level Principle: Students pass through various levels of mathematical understanding: from the ability to invent informal context-related solutions, to the creation of various levels of short cuts and schematizations, to the acquisition of insight into the underlying principles</p>	<p>Progression in Understanding Historical Accounts: Lee and Shemilt (2004) identified a set of levels to depict students' understanding of evidence. Building on this, Maggioni and VanSledright identified three epistemic levels of historical understanding: Copier, Borrower and Criticist (2016).</p>	<p>Design activities to move children through epistemic stances (Absolutism – Multiplism –Evaluativism): Targeted instruction employing the developmental path proposed by Kuhn, Cheney & Weinstock (2000) can assist in making the transition towards a more Evaluativist approach e.g., Absolutist thinking was challenged by the introduction of activities based on the concept of multiple perspectives and engagement with these prompted a move towards a more subjective Multiplist stance. The sourcing activities, coupled with the activities based on argumentation, reintroduced the objective nature of knowledge and allowed children to see that some claims can be 'more right' than others</p>
<p>Inter-twinement Principle: The subject is not split into distinctive learning strands. Solving rich context problems often means applying a broad range of mathematical cognitive tools and understandings.</p>	<p>Historical Thinking: A set of critical thinking skills for evaluating and analysing evidence to construct an account of the past. There is no separation of content and process. Both are intertwined (Lévesque, 2008).</p>	<p>Embed explicit strategies into instruction: Using heuristics such as ICEACT can allow children interrogate evidence in a comprehensive manner. Explicit strategies scaffold approaches to historical evidence and provide concrete strategies to allow children to deal with conflicting narratives.</p> <p>Explicit instruction of domain-specific language: Teacher modelling subject-specific language and embedding language learning tasks into children's experiences of history contributes to the development of a domain-specific vocabulary bank which helps students to read evidence and discuss issues such as positionality and perspective and generate arguments.</p>

<p>Interaction Principle: Mathematics is considered as a social activity where students share their strategies and inventions with each other.</p>	<p>Social Constructivism: human development and learning is seen as socially situated and knowledge is constructed through interaction with others. (Bruner, 1966).</p>	<p>Provide opportunities to engage in collaborative dialogue and the space to pose and reflect on critical questions: In dialogic history classrooms the focus should remain on the generation of historical questions, the space to listen to and/or refute opposing arguments and the opportunity to craft and develop evidence-based arguments.</p>
<p>Guidance Principle: teachers must be able to anticipate student understandings and skills. Educational programs should contain scenarios which have the potential to work as a lever in shifting students' understanding of mathematical concepts.</p> <p>(van den Heuvel-Panhuizen, 2000)</p>	<p>Conceptual Change: A teaching strategy where students are provided with opportunities to voice their current conceptions, investigate the plausibility of these conceptions and then reflect on and reconcile the differences (Stepans, 1996).</p>	<p>Incorporate Analogical Conceptual Change Model to initiate epistemic disruption: The ACCM can shift understanding of historical concepts: Articulation (where children discuss their ideas about the concept under consideration in response to a trigger question). Analogical Confrontation (epistemic beliefs, are challenged through a series of analogy-based activities. Engagement (the application of new understandings to a historical topic related to the concept). Explication (connecting the conceptual analogy specifically to the study of history).</p> <p>(Based on design principles and research findings)</p>

8.7 Limitations

Like all research, this study has several limitations which need to be acknowledged. Much of these arose from issues such as time constraints, access to participants and the fact that I was a solo investigator researching in my own place of work. The first and second cycle of this study took place while I was a member of staff in St. Barnabas' School. As Cycle 1 was quite short and involved five participants, access was unproblematic and the cycle was completed relatively quickly thanks to the goodwill of the class teacher. Cycle 2 was conducted in my own classroom and though it was considerably longer as a result of changes made to the original HLT, as the class teacher, I had the freedom to design my monthly teaching plan around integrating HLT2 into instruction. Cycle 3, however, was conducted when I was no longer a member of the teaching staff and this had a number of implications that may have affected the delivery of HLT3.

Firstly, access to the participants had to be negotiated and this was directed by the class teacher's own timetable and curricular planning. Secondly, Cycle 3 was interrupted by a number of lengthy school holidays and so this cycle took longer to complete; this factor needs to be considered when deliberating on the overall results of Cycle 3. Thirdly, as I was no longer a member of staff, access to the students had to be supervised and so interviews, enquiries and the teaching interventions were conducted with another staff member present. Although the additional staff member made no contribution to the proceedings, her presence may have inhibited students.

Another limitation that affected this study was the fact that not only was I a member of the teaching staff at St. Barnabas' during Cycle 1 and 2, I was also the class teacher of the class involved in Cycle 2; therefore, my subjectivity creates an additional limitation for this research. The limitations involved in regard to objectivity, positionality and bias, and how I attempted to offset these, have been discussed already in Chapter Four. An additional limitation that must be acknowledged is the fact that not only was I a member of staff and class teacher of one group of participants, I was also a solo-researcher.

Some criticisms have been levelled at the large role played by the researcher in the intervention and the research process in DBR. For example, Molina. Castro and Castro (2007) recommend, due to the large amount of data often generated using this methodology, that a number of researchers are involved in DBR projects. As Kennedy-Clark (2015) points out, other issues can arise in solo-researcher situations such as a conflict of roles in that the researcher is also the designer, developer, facilitator and evaluator of a project. Though Kennedy-Clark (2015) notes that the juggling of multiple roles can be beneficial in terms of the researcher possessing a full understanding of the whole process of the project, there are unavoidable tensions that can arise. To mitigate these, several strategies based on her recommendations were employed. One of these was the use of a multidisciplinary panel which included an expert in history education, an expert in mathematics education and an expert in design-based research. This panel was consulted at several stages during the development of the materials and research instruments and during the process of implementation. Also recommended by Kennedy-Clarke was the submission of the research project to conferences, particularly through a blind peer-review process. The results of this study have been submitted and reviewed positively on two occasions (See Appendix R).

Another limitation arose in terms of data collection, in particular, with respect to how some children responded to the questions asked during the interviews. Conversations relating to abstract topics, particularly tacit ideas such as conceptual understanding are, as Barton (2015) points out, rarely discussed in everyday conversations. As I found during the interview process, a number of children had difficulty articulating their ideas, particularly in response to questions relating to defining history and multiple perspectives. In retrospect, the addition of elicitation tasks such as drawing, sorting and photo tasks (Barton, 2015) may have been more productive for those who children who struggled to formulate the ideas they had.

In addition to this, the interviews brought up the possibility of participant bias. This occurs when participants act or respond in ways they believe correspond with what the researcher is looking for. Although it was specified at the start of the interview that I wanted to hear their honest opinions, and there were no right or wrong answers, because I was known to the children as a history specialist in the school, and they were aware that I was doing research on children and history, there was a strong possibility that some children would simply give me the answers they thought would please me.

Many DBR Teaching Experiments use multiple methods of data collection which often include video recordings. Video recordings lend to the exploratory nature of design-based research and are particularly useful as not all variables of importance can be identified beforehand and may only appear as significant in the retrospective analysis of the data (Molina, Castro & Castro, 2007). While video technology offers the capacity to capture complex social interactions and may have offset some of the limitations imposed by being a solo researcher, negotiating permission from the Board of Management of the school to use video with the children proved difficult. To offset the limitations this imposed, a variety of data collection methods were used. These included audio recordings, worksheets and the use of reflective history journals. The children's journals were completed at the end of each teaching intervention and, initially, children filled these in by simply summarising what they had done that day. As I wanted to gain access to their understanding of the day's activities, it was necessary to refocus the journal layout to reflect what they learned as opposed to what they did. These journals also proved to be an effective safeguard against my own biases by providing independent verification of their understandings. This variety of data collection methods also helped to improve reliability by ensuring that there was a degree of independence from the researcher. The HLT which underpins this research also contributed towards reliability by acting as the guide in the formation of the DBR Teaching Experiment and also in the retrospective analysis, ensuring a degree of independence from the researcher (Bakker & van Eerde, 2015).

8.8 Implications of this study for Irish history education

Unfortunately, the current Irish Primary History Curriculum, like a number of other curricular subjects, has never been officially reviewed. As a result, there is scant information on how the curriculum actually translates into classroom practice. While there has been no official review of the implementation of the Irish Primary

History Curriculum, an Irish National Teachers' Organisation (INTO) survey of teachers found that attention to skills development, and in particular, interpretation of evidence, did not feature strongly in teacher planning for history (INTO, 2005). This lack of attention has also been noted in several curriculum evaluation reports on history conducted by the DES. These state that not enough emphasis has been given to the development of pupils' skills and concepts in history. The reports also state that students should be afforded more frequent opportunities to engage with a range of primary sources with a distinct focus on developing evaluative, deductive and analytical skills to enable them to work as historians (DES, 2016).

Despite a strong curricular focus on the development of a historical thinking skillset through the strand "Working as a Historian", a small body of research (INTO, 2005; Waldron, Pike, Varley, Murphy, & Greenwood, 2007) indicates a continuance on the reliance of textbooks. This suggests a weak implementation of the history curriculum that is actually at odds with curricular guidelines. This is a regrettable finding as the current curriculum, despite the passing of twenty years, is considered to be a progressive, research-informed one which balances effectively the skills of the historian with historical content (McCully & Waldron, 2013; Walsh, 2016; Waldron, 2004). This is not just the case in Ireland; indeed, one of the biggest challenges in teaching a disciplinary approach to history internationally is the fact that many teachers at primary level do not have expertise in the discipline (Stoel, van Drie, & van Boxtel, 2017) and often resort to textbook instruction.

In light of these observations, research into developing theoretically and empirically founded pedagogical practices for teaching history is warranted. This study has contributed to this by developing a local instruction theory that can be used to guide teachers in delivering lessons that attend to the epistemic bottlenecks that can hinder student understanding of historical evidence. Local instruction theories go beyond providing an instructional sequence of activities that work, they provide an empirically grounded explanation of how and why they will work (Gravemeijer, 2004). The "why" of local instruction theories is important to note, particularly in light of the discrepancy between policy and practice as indicated by the INTO survey (2005) and DES reports. The local instruction theory for using historical evidence highlights for teachers the conceptual ideas important to the study of history and in doing so may inform teachers' own understanding of the discipline. It also provides a theoretical basis which can inform teachers about setting learning goals and developing activities to suit individual classes. As each class is unique, it is, as

Gravemeijer (2004) argues, more appropriate to offer class teachers frameworks of reference such as local instruction theories and a set of exemplary instructional activities that can act as a source of inspiration rather than a set of ready-made lessons.

A series of exemplary learning trajectories to accompany the local instruction theory were designed and empirically tested. These trajectories are not intended as a step-by-step approach to be enacted in the classroom, rather, they should be viewed as guides to enable teachers to plan learning routes for their own classes. By highlighting the probable obstacles that students encounter, the trajectories can also inform teachers where and when these are likely to occur and provide useful strategies to overcome them. In addition, the local instruction theory outlined here can provide a theoretical basis from which researchers can build new trajectories to test as well as providing teachers with a resource to use to plan their own HLTs for their individual classrooms.

Although those epistemic bottlenecks specific to history that were encountered in this study share commonalities with research conducted internationally (Barton, 1997a; Barton, 2001a; Chapman, 2011; Lee & Shemilt, 2004; Lee & Ashby, 2000; Barca, 2005), the idea of a universal trajectory of historical learning is, in fact, impossible. There are too many variables to consider such as instructional practices, media, pedagogy, cultural influences and experiences of history outside and inside the classroom. Trajectories, however, are of use in providing empirically-based descriptions of the development of children's thinking in a particular topic or concept and, when adapted for a particular class, can provide information for the class teacher on the levels of understanding as well as provide information on types of pedagogical practices that are liable to help children. Learning trajectories that have been empirically tested in classrooms can also be used to inform curricular design that is focused on the learner rather than a set of standards. Given the context within which this study is situated, a period of curricular change in Ireland, the results of this study are timely and may contribute towards the curricular debates on the teaching of history at primary level.

8.9 Implications of this study for curricular reform in Ireland

Ongoing review, reform and redevelopment of curricula are essential to ensure that content and methods are reflective of wider societal developments (Walsh, 2016) and as stated in Chapter One, Ireland, at present, is in the midst of a period of considerable curricular reform with proposed changes to primary education

following closely behind the launch of the new Junior Cycle Framework for second-level education. Curricular reform has become a priority not only in Ireland but internationally and the bulk of these changes denote a fundamental swing from a knowledge-based curriculum to a skills and competencies based one (Walsh, 2016).

If curricular reform is to be meaningful, then research on student thinking and student progression needs to inform curricular design and learning trajectories combine both. As Clements and Sarama (2004) argue, the strength of a curriculum informed by empirically tested learning trajectories is that the scope and sequence of the curriculum is founded on close analysis of students' thinking as they engage with the content and the sequence in which it is presented. The trajectories developed during this study, which were underpinned by the pedagogical principles of the local instruction theory (as discussed in Chapter Seven), have been empirically tested in three primary classrooms and may prove useful to curriculum designers when devising future curricula. Two such examples of this are given below.

The current primary history curriculum has many strengths, one of these being a strong focus on historical thinking skills; however, there are some contradictions concerning children's capacities for critical engagement. While the IPHC (1999a) endorses the abilities of children to engage with historical matter, there are examples of deficit thinking in regard to their capabilities to be found in the curriculum documents. For example, the Teacher Guidelines state "For the most part, primary school children's examination of evidence should be confined to primary evidence, as they will not have the level of abstract thinking required to compare and criticise contrasting secondary interpretations" (NCCA, 1999b, p. 12). This study has shown that, with targeted instruction in the use of strategies such as ICEACT, children can critically interpret a range of conflicting primary and secondary sources simultaneously. In light of this critical engagement, this study recommends that such limitations not be imposed in further iterations of the primary history curriculum.

Another contradiction relates to the process of historical enquiry. An examination of both curricular documents finds that the word "enquiry" appears seven times in total but these references are in broad terms and the nature of historical enquiry is neither defined nor examined (NCCA, 1999a; 1999b). The strand "Working as a Historian" identifies the skills and concepts that are central to historical enquiry but an explanation of enquiry as a methodology is absent and its centrality to the interpretation of history remains implicit. As this study has shown, historical enquiry, when made explicit to children, engages children in the process of

“working as a historian”. One notable finding, discussed in Chapter Five, was that children who had been exposed to enquiry-based practices had a deeper understanding of history as an interpretative discipline. The effectiveness of enquiry-based practices was highlighted again in Chapter Seven and this emerged as one of the four design principles that were identified as integral to historical study. Future iterations of the primary history curriculum need to be cognisant of the centrality of historical enquiry as a methodology and make this an explicit rather than implicit feature of prospective programmes at both a theoretical and practical level.

8.10 Implications of attending to epistemic bottlenecks about history

History is a human construct and one of its central features, the capacity to engage in historical thinking, is a socially-mediated activity that most of society, consciously and sub-consciously, engages in on a daily basis. History is complex and multi-faceted and rooted in the skills of problem-solving and evidence-based argumentation. Evidence-based argumentation has a deep-seated connection to the development of democratic ideals. In fact, meaningful participation in any democracy necessitates an ability to engage with public debates on both societal and current issues. This ability, in turn, is predicated upon the individual’s capacity to take an evidence-based critical stance, to mount a counter-argument or to convince another to see an alternative perspective. Added to this is also the ability to be persuaded by the coherent and intelligible arguments of others. Skills such as these are essential not only for the promotion of democratic ideals but for the continuous refinement and shaping of society.

Schools are a likely place for the refinement of such skills and can effectively contribute towards the establishment of what Habermas calls a “deliberative democracy” (Chambers, 2019) through engagement with classroom dialogue and argumentative reasoning. Essential to realising a vision of dialogic classrooms is the identification of pedagogies and disciplinary spaces that can enhance argumentative practices that have practical application for everyday life. School history is, I believe, one such disciplinary space. Barton (1997a) maintains that “the use of evidence to reach supportable conclusions is one of the most important objectives of the social studies, indeed, of most disciplines” (p. 407); however, this particular objective is often side-lined in the history classroom.

History, when practiced as a form of enquiry, moves students from viewing historical evidence and texts as repositories of information and towards purposeful evaluation in which issues such as positionality, intent and purpose are critiqued and

multiple or conflicting accounts are interrogated. While prior knowledge is essential to the development of a reasoned argument, epistemic beliefs also play a considerable but often neglected role in this process. Developing an epistemic stance in which knowledge claims are viewed from an Evaluativist position has many implications for both the teaching and learning of history as it moves an individual from an Absolutist view of the past to a more critical position. This, in turn, has implications for the type of history students engage with and the level to which this occurs. For example, it allows for an informed and reasoned exploration of issues such as contested and controversial histories in a holistic and comprehensive manner.

In recent decades the single narrative approach to history teaching has received criticism, particularly in light of the increased diversification and cultural pluralism in society. In response to this diversification, educators have called for a turn towards multiperspectivity. Multiperspectivity is built upon the premise that any event, idea or period can be viewed in more than one way. Multiperspectivity, as this study has shown, is complex and requires a personal understanding that people's experiences of an event can shape subsequent interpretations. From a historical point of view, multiperspectivity allows children to explore a historical event from a variety of perspectives and as the results of this study indicate, this capacity rests upon an acknowledgement of the "slippery nature" (Monte-Sano & Reisman, 2015) of historical knowledge itself. Historical narratives often contain multiple and conflicting perspectives and a key learning point children should take from the study of history is that these narratives can be constructed and interpreted in a variety of ways.

On an individual level, this understanding has implications that are far-reaching, particularly in an era of unparalleled media and information consumption. In such a media-saturated environment, where competing claims clamour for attention, children need to recognise that these claims are often written from a certain perspective and for a certain purpose. The capacity to recognise these different perspectives in news stories, propaganda or even election campaign adverts is a necessary skill for the modern age. On a broader, societal level, when children acknowledge the existence of a variety of perspectives, they are more open to understanding and accepting differences (Barton & Levstik, 2004).

In Chapter Two, I proposed a theoretical framework for history education that combined reflective disciplinary enquiry, historical thinking and historical consciousness. These three aspects, when brought together, can provide a praxis,

philosophy and purpose for doing history that moves it beyond the confines of classroom walls and makes it an essential aspect of everyday life. Reflective disciplinary enquiry can be considered as a pedagogical approach to teaching history that can provide the space to deepen an individual's historical consciousness. It does so through consideration of the kinds of historical questions that position historical content within a broader societal sphere. Answering such questions is dependent on a particular, and historical type of thinking. Historical thinking skills, when considered as cognitive manifestations of historical consciousness, provide the conceptual tools to engage with a variety of expressions of historicity.

Nordgren (2016) defines historical consciousness as the means by which individuals “emotively and cognitively, understand the relations between past, present, and future” (p. 481); furthermore, this understanding, influenced by historical culture, guides how history is used in the present. Historical consciousness, therefore, encapsulates how the individual makes use of history to explain, construct, and transform identities and societies (Nordgren, 2016). While historical consciousness is situated at the intersection of an individual's interest, knowledge and understanding of the past (Nordgren, 2016), it also depends on particular cognitive acts that include “the peculiarity of historical thinking and the function it plays in human culture” (Rüsen, 1987, p. 284). As historical consciousness includes the capacity to apply these historical thinking and reasoning skills within a chronological frame of reference, it can be described as a meta-cognitive way of thinking and reasoning about the past that can influence how an individual both perceives and acts in the present and anticipates the future.

A number of the activities devised in the HLTs for this study contribute towards enriching students' historical consciousness by attending to some of the epistemic bottlenecks that work to impede historical thinking and reasoning. Several studies on student understandings of history suggest a series of recurring ideas about the discipline that have consistently been shown to impact on a conceptual understanding of history. Of note is the fact that many students can struggle to account for variations in historical interpretations because the very existence of multiple accounts conflicts with their objectivist preconceptions about the nature of historical knowledge. These preconceptions are often based on the everyday ways of knowing that students often tacitly hold (Chapman & Goldsmith, 2015). The facility to accept the existence of multiple perspectives is perhaps the most significant of these.

Gadamer (2006, p. 285) claims that "our historical consciousness is always filled with a variety of voices in which the echo of the past is heard" and the ability to process multiple perspectives on historical events has been identified as a central construct of a "sophisticated" historical consciousness. Multiperspectivity, as Grever (2012) points out, does not entail a complete understanding of the intentions of historical actors; however, it can lead to an openness towards other perspectives that allows the individual to contest their own assumptions about the past. Central to this conceptualisation of historical consciousness is the reflexivity of the human spirit, the ability to look at a multiplicity of positions and it is this which enables the individual's capacity to see the perspective of the other.

Students' historical thinking skills include, among others, the ability to construct and deconstruct historical narratives and the ability to arrive at historical interpretations based on historical evidence. On a personal level, these cognitive acts can encourage a critical attitude towards historical interpretations. Such an attitude is crucial, not only for understanding the nature of history, but also for understanding that such interpretations, for example, in newspapers, movies, books, television, museums and the internet are rarely neutral and can be contested. Such deconstructions and reconstructions of historical interpretations have also been acknowledged as a central component of historical consciousness (Martens, 2015).

Engaging in these practices to a meaningful degree, however, is dependent on the development of what Lee (2004) describes as a metahistorical understanding of the discipline. By metahistorical, Lee refers to the "organising ideas" that underpin students' conceptualisations of the subject, those big ideas that give meaning and form to an understanding of history. Lee (2002) argues that "whatever else our understanding of historical consciousness may encompass, it must include some account of people's ideas about the discipline of history" (p. 5). These ideas are an important aspect of historical consciousness but they are also epistemic in nature and as the findings of this study indicate, epistemic beliefs are tacit and deeply held, grounded in children's everyday experiences of the past and remarkably stubborn, but not impossible to shift.

8.11 Recommendations for further research

Following the successful implementation of the learning trajectories in this study, additional work in this area would be of benefit to the teaching and learning of history. Other possible lines of exploration include further testing of the trajectories in other schools, contexts and age levels to complement the ones developed for this

study. Such empirical work would serve to strengthen the current trajectories or lead to the creation of new ones in other conceptual areas such as time and chronology. As discussed earlier, further work in this area can also contribute towards the identification of additional design principles and the creation of further instruction theories. Additional lines of research could focus on the classroom teacher's implementation of learning trajectories in a variety of classrooms.

As this study was focused on the thinking processes of children, the role of the classroom teacher was purposely removed. It must be noted that the teacher has an important role to play in the effective implementation of a series of learning trajectories. Many studies across a variety of disciplines indicate that the teacher action in the classroom bears a strong correlation to teacher beliefs about the subject. As a number of studies have found, teacher beliefs can act as filters that determine decision-making in terms of content and how this is achieved (Hoy, Davis, & Pape, 2006; Pajares, 1992). Although there has been no systematic review of history as practiced in Irish primary classrooms, anecdotal evidence and small-scale studies suggest the textbook still dominates and determines practice (INTO, 2005; DES, 2016). In this regard, research focused on investigating and exploring Irish primary school teachers' own epistemic understanding of history, and the influence these epistemic beliefs have on the practices they use in the classroom, is another avenue worth pursuing.

Building on this observation, there is also scope for learning trajectories to be used with pre-service student teachers who very often have a weak understanding of the nature of history when entering teacher education programmes. Several researchers (e.g., VanSledright, Maggioni & Reddy, 2011; VanSledright & Reddy, 2014) have proposed that teachers' domain-specific epistemic beliefs about the nature of knowledge and teaching and learning in history can cause complications in their teaching practices. If this is indeed the case, then helping student teachers develop more sophisticated specific epistemic beliefs about history may be an important initial step in enabling them to improve practice. Trajectories such as this could serve as introductory seminars aimed at challenging student teachers' existing preconceptions about teaching and learning history.

8.12 Personal reflections

While the objectives relating to this study were primarily of an academic nature, there were also a number of personal objectives I had hoped to achieve. At the heart of these personal objectives was a desire to change the way children think

about history. History is a school subject that I believe has been plagued by ill-conceived educational practices that do little to uncover the dynamic interplay of evidence and interpretation and one of the highlights of this PhD study, on a personal level, has been witnessing the transformation in children's attitudes towards the subject. One incident particularly sticks in my mind and occurred at the end of Cycle 3 when the whole classroom was heatedly involved in a debate, a historical argument, rather, on the subject of Oliver Cromwell and his actions in Drogheda in 1649.

This spontaneous debate was the culmination of all I had hoped to achieve with these students and the class teacher and I sat back and watched in amazement as the children began to debate the issue. Arguments, interpretations and counterclaims built on evidence were rallied back and forth with delighted enthusiasm and excitement. Afterwards, the children, exhausted but euphoric, expressed a newfound love of the subject. One student remarked "God, I loved that, it was just deadly" – high praise indeed in Dublin's north inner city! While it was gratifying on a personal level to see such a shift in the children's attitudes, the level of engagement and the sophistication of the arguments posed assured me that the teaching interventions had been successful in re-orienting children's ideas about historical evidence and argumentation.

Another personal objective related to my roles as both a teacher and a teacher educator. When I began this research, I began with a purpose in mind. I wanted this study to make a difference to the teaching of history that would not only benefit children but also benefit those who teach them. The pragmatic, output-driven nature of design-based research intuitively appealed to me for it provided the means by which I could do both. While adapting the DBR Teaching Experiment methodology to the domain of history was a long and arduous task that, at times, seemed impossible, the fruits of the research have gone beyond my initial expectations and in the process, I have gained much, most particularly in terms of my own capacity as a researcher. The fluidity of DBR as a methodology makes it an exceptionally good fit for educational research, particularly research that takes place in actual classrooms. This fluidity allowed for the introduction of a variety of research instruments and data analysis techniques which let me get right to the heart of the issues at hand whilst also introducing me to a range of research approaches that another methodology may have constrained. As a result, I feel my experience with DBR has been most productive.

Despite fifteen years of teaching primary history, I was unprepared for the transformation that happened to my own thinking. As well as gaining a much deeper conceptual knowledge of history as a discipline, I also developed a much deeper appreciation of the sophistication of children's thinking. While I have always believed that this is an area that is not only under-researched but also under-valued, my experiences with the children involved in the study caused me to reflect more deeply on the fact that I too underestimated the capacity of children to think in such complex and abstract terms on issues of a deeply philosophical nature. In many respects, this was my very own epistemic bottleneck, and after a short process of personal epistemic disruption, not only did I realise children's capacity for engaging in sophisticated dialogue and reasoning but that the ability for them to do so was constrained by two very simple obstacles: the asking of considered questions and the space and time to reflect on and answer them. This experience highlighted for me the complexity of children's thinking and this has had a significant impact on the writing of this dissertation and how I read the literature relating to it. While the topic of this research focused on the epistemic bottlenecks encountered by children when engaging with evidence, and so, focused on the difficulties children encountered, I have attempted to frame these through a capacity-building lens rather than from a deficit perspective.

In light of this epistemic disruption, it became apparent to me that many researchers minimise children's capabilities and adopt a reductionist view on children's capacities for critical engagement that concentrates on what children do not know rather than what they do know. Employing ceilings on children's thinking can lead to problematic assumptions such as a view that gaps in understanding are shortfalls rather than viewed as potentials for capacity-building. Placing such a ceiling on children's thinking is a flawed conjecture and as the interview and enquiry data show, primary-aged children have the aptitude and the capacity for critical engagement with abstract and philosophical topics once provided with engaging questions and the space to engage with them. In fact, one of the more satisfying (on a personal level) outcomes to emerge from this study was the confirmation that primary children's historical thinking in many respects parallels, and at times exceeds, the historical thinking of older students.

8.13 Conclusion

This thesis began with the idea that a primary child's understanding of history is not only linked to their own epistemic beliefs about knowledge but that these may

be challenged. Epistemic beliefs are important factors to take into consideration as children negotiate themselves through the difficult conceptual terrain of understanding the nature of history and historical evidence. Rather than conceptualising epistemic bottlenecks as deficits, they can be put to constructive use, particularly if classroom teachers utilise them as catalysts or springboards to enable children to critically examine their own ingrained beliefs about historical knowledge and knowing.

Learning trajectories, which are designed to build upon children's prior knowledge and preconceptions, may be enacted in the classroom as such springboards, especially if they are designed to interrogate and challenge the bottlenecks that inhibit the enriching of children's historical consciousness. As the results of this study indicate, learning trajectories and the local instruction theories that underpin them can offer considerable support for the teaching and learning of history. They do this by developing in children a conceptual understanding of the discipline and thus can orient them towards thinking in historically conscious ways.

In a study that is premised on the importance of children's voices, it is only fitting that the last words should also belong to the children. The following piece was taken from the final post-intervention interview which was conducted with Brad from Cycle 3.

So, I say history can be the future as well, cos it can be the past and future and present because - you're going to do something and then you do it and when you do it, it's history. So let's just say I threw that water bottle on the floor, that's the past, but the future can be the past as well. So let's just say I'm going to throw another bottle on the floor. So then I throw it on the floor and it becomes the past. You know what I mean? Well, when I'm thinking about doing something, it's still in the future. When I do it, it's in the past. There are things that haven't happened yet, that we don't know about, but when we do they will be history, our history.

In the current context of globalization and ensuing crises such as climate change and sustainability demanding immediate attention, society is challenged to straddle the connection between past, present and future. For children such as Brad to realise that each present has been informed by the past, and was once an imagined future, is both heartening and powerful and a lesson for educators to never underestimate the strength and depth of children's thinking.

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APPENDICES

Appendix A: Plain language statement

5, February, 2016

To the chairperson of the Board of Management,

My name is Caitriona Ní Cassaithe and I am currently undertaking a Master in Education in St. Patrick's College, Drumcondra. I am embarking on a research study investigating children's beliefs about the nature of history. This plain language statement has been prepared to address any questions or concerns you may have in regard to the children or the school's involvement in this research study.

Involvement in this research will require a group of children to take part in one-on-one and a small group discussions. In these discussions the children will be asked about their thoughts on history and will be asked to take part in a number of age appropriate historical activities which will allow me to explore their thoughts and ideas about the past. These interviews will be audio recorded and the recordings will only be used by myself for the purposes of the study. The children will also fill in a short questionnaire.

Following this, they will be involved in a series of carefully prepared teaching lessons designed to develop their historical thinking skills and analysis of historical evidence. The children will be under no risk at any stage from involvement in this study, in fact by taking part, it is hoped that the children may gain a deeper understanding of history and develop a range of critical thinking skills which will benefit them.

Every effort will be made to ensure that both the identity of the school and the children involved are protected. The school, staff or children involved in this study will not be identifiable in any report or publication that arises from this research. Code names will be used at all times in the writing of the research which shall only be identifiable to myself. Audio recordings and all documentation will be confidential and only identifiable by a reference number.

Data collected will only be used for the purposes of this research and confidentiality will be protected at all times within the limits of the law. At all times the data in my possession will be securely kept under lock and key. All data gathered during the research will be destroyed twelve months after the completion of this study.

The school's involvement in this research is voluntary and you are free to choose whether or not the fourth class children participate. The project will be explained in full to the children and parents of the class before any part of the study commences and they will be given the opportunity to choose to take part if they so wish.

The participants will be free to withdraw from the study at any time they so wish. They face no penalty for withdrawing before all stages of the study are completed.

Yours sincerely,
Caitriona Ní Cassaithe

If you have further concerns about this study and wish to contact an independent person please contact:

REC Administration, Research Office,
St Patrick's College, Drumcondra, Dublin 9.
Tel +353-(0)1-884 2149
research@spd.dcu.ie

Appendix B: Information sheet for fourth class

I am doing a course in St. Patrick's College, Drumcondra. As part of this course I am doing a research project. For this project, I want to listen to what the children in fourth class think about history. This letter is to give you some information about the research project.

What's involved?

If you choose to take part in this project, I may be interviewing you to find out your thoughts about history. I may also ask you to do some quick activities such as looking at evidence from the past. This will let me find out what children your age think about history. I will be recording these interviews on an audio tape. I will be the only person who will listen to these.

I may also ask you to fill out a questionnaire. It is also about history and you just have to tick the boxes. I will also be teaching you some history lessons where we will look at lots of different evidence and talk about what they tell us about the past. These discussions will also be recorded and I will be taking notes. The recordings and notes will only be used by me as part of this research project.

Are there any risks involved?

There are no risks involved in this research project, in fact, you will learn lots of new ways to do history.

Will people who read this research project see my name?

I will make every effort to ensure that your name will not be used when I write about this research. You will be given a code name so that your identity will not be known. Your confidentiality will be protected at all times within the limits of the law.

What will happen to the information when it is collected?

The information will be used to help me write about the research project. At all times I will keep the data safely stored and I will destroy all information related to the study twelve months after its completion.

Do I have to take part in this Research Study?

It is completely your choice whether to take part in this research project or not. If you want to take part, you must complete the consent form I have given you and your parents/guardians must also sign it to say you are allowed to take part. If you decide during the research that you do not want to take part any more, all you have to do is tell me. There are no penalties for pulling out at any stage.

What if I have other questions?

If you have any further questions then you can ask me them in school. I have also told your parents/guardians about this research project so you can talk to them about it as well.

Yours sincerely, Caitriona Ní Cassaithe

Appendix C: Information sheet for parents/guardians

My name is Caitriona Ní Cassaithe, a class teacher in St. Joseph's Co-ed., and I am currently undertaking a post graduate course in St. Patrick's College, Drumcondra. As part of this course I am embarking on a research study investigating children's beliefs about the nature of history. This information sheet is designed to answer questions or concerns you may have about this research.

What does this Research Study Involve?

This research study may involve your child taking part in a short twenty minute discussion. In this discussion I may ask your child to take part in a number of simple age-appropriate history activities which will allow me to explore their thoughts about history. The children may also be asked to fill in a short questionnaire about history.

The children will also be involved in a series of teaching lessons I have designed to help develop their historical thinking skills. The interviews and teaching sessions will be audio recorded and the recordings will only be used by myself for the purposes of the study.

Is there any risk to my child from taking part in this study?

The children will be under no risk at any stage from involvement in this study, in fact by taking part, it is hoped that the children may gain a deeper understanding of history and develop a range of critical thinking skills which will benefit them.

Could my child be identified from this study?

Every effort will be made throughout this study to ensure that your child cannot be individually identified. Confidentiality will be protected at all times within the limits of the law. Code names will be used instead of real names in the write up of this study. A key which links the code names to the original names will be kept in a secure file known only to me. Audio recordings will be kept confidential in that they will be identified by a reference number only.

What will happen to the data once it is collected?

The data will be used to help me write up my Research Study. At all times I will keep the data safely stored. I will destroy all information related to the study twelve months after its completion.

Does my child have to take part in this Research Study?

Participation in this study is on a voluntary basis. You are free to choose whether or not you would like your child to participate. In completing the consent form you are allowing your child to take part in the study. The research process will be explained to your child and he/she will be given the opportunity to choose to take part. If you wish your child to withdraw from the study at any time, you can do so by informing me. There will be no penalty against your child for not taking part in this Research Study.

Yours sincerely,

Caitriona Ní Cassaithe

If you have further concerns about this study and wish to contact an independent person please contact:

REC Administration, Research Office,
St Patrick's College,
Drumcondra,
Dublin 9.
Tel +353-(0)1-884 2149
research@spd.dcu.ie

Appendix D: Student consent form

Dear student,

This research project wants to explore what children in Fourth Class think about history. To do this you may be asked to take part in a short interview and history activities, complete a questionnaire and take part in some history lessons where you will look at historical evidence.

Confirmation of involvement:

I am aware that if I agree to take part in this study, I can withdraw my involvement at any stage and that there will be no penalty for withdrawing from the study before it has been completed.

I know that every effort will be made throughout this research project to ensure that my identity will not be revealed and that the data collected will not be used for any other reason other than this research.

I am also aware that the data gathered will be destroyed twelve months after the completion of this study and until then the data will be in the possession of Ms. Ní Cassaithe and will be safely stored.

Please complete the following circling Yes or No for each question.

Have you read or had read to you the information sheet?	Yes	No
Did you understand everything on the information sheet?	Yes	No
Were you given the chance to ask questions about this study?	Yes	No
Would you like to take part in this study?	Yes	No

I have read and understood the information in this form. Ms. Ní Cassaithe has answered my questions and I have a copy of this consent form. Therefore, I agree to take part in this study.

Name: _____

Date: _____

Appendix E: Parental consent form

To parents/guardians.

The purpose of this research is to investigate children's beliefs and attitudes to the subject of history. Should you agree to your child participating in this research, he/she may take part in an interview and will complete a short questionnaire and complete some age appropriate historical activities. He/she will also take part in a series of history lessons designed to develop historical thinking skills.

Confirmation of involvement:

I am aware that if I consent to my child taking part in this study, they can withdraw at any time and that there will be no penalty for their withdrawal before all stages have been completed.

I acknowledge that every effort will be made throughout this research to ensure that the identity of my child will be protected. My child's names will be changed to preserve anonymity and that any data collected will only be used for the purpose of the research outlined here. I am also aware that the data collected during this research will be destroyed within twelve months of completion of this research and that until then, all data will remain in the possession of the researcher and will be stored securely.

Parent/Guardian – Please complete the following statements by circling Yes or No for each question.

Have you read or had read to you the Information Sheet?

Yes No

Do you understand the information provided?

Yes No

Have you had an opportunity to ask questions or discuss this study'?

Yes No

Have you received satisfactory answers to all your questions?

Yes No

I have read and understood the information in this form and the researcher has answered my questions and concerns. I have a copy of this consent form. Therefore, I consent to give my child permission to take part in this research project.

Parent/Guardian Name:

Child's Name:

Date:

Appendix F: Interview protocol

1. What is history?
2. Why do you think we study history in school? (Why is it important?)
3. How do you feel about studying or learning about history?
4. What are the best ways to learn history?
5. What do historians do? (If you were to watch them work what would you see them doing?)
6. During a history lesson, what do you typically do?
7. What would make studying history interesting or enjoyable for you?
8. Are you good at history? Why?
9. How would you describe someone who is good at history?)
10. If two people witnessed the same event, would it be possible for them to give different accounts of what happened? Why? How does this effect studying history?
11. How do people find out about how things were different in the past?
12. Have you ever learned about history or the past or long ago outside of school?

Those are all the questions I have for you. Do you have any questions for me?

Appendix G: The Levels of Epistemic Understanding Instrument

Name:

Judgments of Personal Taste	Can both views be right?	Could one view be more right?
Robin says warm summer days are nicest. Chris says cool autumn days are nicest.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin says the stew is spicy. Chris says the stew is not spicy at all.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin thinks weddings should be held in the afternoon. Chris thinks weddings should be held in the evening.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Aesthetic judgments		
Robin thinks the first piece of music they listen to is better. Chris thinks the second piece of music they listen to is better.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin thinks the first painting they look at is better. Chris thinks the second painting they look at is better.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin thinks the first book they both read is better. Chris thinks the second book they both read is better.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Value Judgments		
Robin thinks people should take responsibility for themselves. Chris thinks people should work together to take care of each other.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin thinks lying is wrong. Chris thinks lying is permissible in certain situations.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin thinks the government should limit the number of children families are allowed to have to keep the population from getting too big. Chris thinks families should have as many children as they choose.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Judgments of Truth about the Social World		
Robin has one view of why criminals keep going back to crime. Chris has a different view of why criminals keep going back to crime.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin thinks one book's explanation of why the Crimean wars began is right. Chris thinks another book's explanation of why the Crimean wars began is right.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin agrees with one book's explanation of how children learn language. Chris agrees with another book's explanation of how children learn language.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Judgments of Truth about the Physical World		
Robin believes one book's explanation of what atoms are made up of. Chris believes another book's explanation of what atoms are made up of.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin believes one book's explanation of how the brain works. Chris believes another book's explanation of how the brain works.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist
Robin believes one mathematician's proof of the math formula is right. Chris believes another mathematician's proof of the math formula is right.	No Absolutist Yes Multiplist	Yes Evaluativist No Multiplist

The Death of King Rufus



Lithograph engraved by
A. De Neuville, 1885

King William II was known as William Rufus because of his ruddy (red) complexion. On August 2nd 1100 he was found in the New Forest with an arrow sticking out of his chest and a blood stained shirt.

You must investigate and try to find out what happened. Write your clues in the columns below.

Hunting Accident	Assassination

Source 1

William of Malmesbury - He wrote "Chronicle of the Kings of the English" (c1128)
He was a monk who wrote later in Henry's reign and always tried to get his facts right.

William Rufus had a red face, yellow hair, different coloured eyes... astonishing strength, though not very tall and his belly rather projecting... he had a stutter, especially when angry.

The day before the king died he dreamt that he went to heaven. He suddenly awoke. He commanded a light to be brought, and forbade his attendants to leave him.

The next day he went into the forest... He was attended by a few persons... Walter Tirel remained with him, while the others, were on the chase.

The sun was now declining, when the king, drawing his bow and letting fly an arrow, slightly wounded a stag which passed before him... The stag was still running... The king, followed it a long time with his eyes, holding up his hand to keep off the power of the sun's rays. At this instant Walter decided to kill another stag. Oh, gracious God! the arrow pierced the king's breast.

On receiving the wound the king uttered not a word; but breaking off the shaft of the arrow where it projected from his body... This accelerated his death. Walter immediately ran up, but as he found him senseless, he leapt upon his horse, and escaped with the utmost speed. Indeed there were none to pursue him: some helped his flight; others felt sorry for him.

The king's body was placed on a cart and conveyed to the cathedral at Winchester... blood dripped from the body all the way. Here he was buried within the tower. The next year, the tower fell down.

William Rufus died in 1100... aged forty years. He was a man much pitied by the clergy... he had a soul which they could not save... He was loved by his soldiers but hated by the people because he caused them to be plundered.

Source 2

John Horace Round a historian who wrote the book "Feudal England" in 1895

Gilbert and Roger, sons of Richard de Clare, who were present at Brockenhurst when the King was killed... were brothers-in-law of Walter Tirel... Richard, another brother-in-law, was promptly selected to be Abbot of Ely by King Henry I, who further gave the see of Winchester to William Giffard, another member of the same powerful family circle.

Source 3

Frank Barlow, historian who wrote the book "William Rufus" in 1983

Historians... have hinted that barons... perhaps led by the Clares... had arranged William's death. But there is not a shred of good evidence and the theory merely avoids the obvious. Hunting accidents were, after all, not uncommon.

Source 4

Abbot Suger, a chronicler (wrote about events) who was Tirel's good friend and who sheltered him when he fled to France said:

"It was laid to the charge of a certain noble, Walter Thuroid, that he had shot the king with an arrow; but I have often heard him, when he had nothing to fear nor to hope, solemnly swear that on the day in question he was not in the part of the forest where the king was hunting, nor ever saw him in the forest at all."

Source 5

Judith Arnopp, author of the books "The Mysterious Death of King William II" in December, 2011 and "The Forest Dwellers" - a historical fiction novel.

The night before the hunt Rufus is said to have presented Tyrell with two rather splendid arrows with the words 'to the good archer, the good arrows.' It was one of these arrows that was later found embedded in the king's heart. Allegedly Tyrell shot at a stag but the arrow deflected and lodged in the king's chest. Tyrell, on seeing what he'd done, fled to France.

Source 6

John Simkin, a historian, this was taken from an article in Spartacus Educational

During the hunt, Tirel fired an arrow at a stag. The arrow missed the animal and hit William Rufus in the chest. Within a few minutes the king was dead. Tirel jumped on his horse and made off at great speed. He escaped to France and never returned again to England.

Most people expected Robert Curthose (William's older brother who was in France at the time) to become king. However, his younger brother Henry (who was in the forest that day, but in another part of it) decided to take quick action to gain the throne. Henry rushed to Winchester where the government's money was kept.

After gaining control of the treasury, Henry declared he was the new king. He was supported by the Clare brothers. The new King Henry I generously rewarded the Clare family for their loyalty. Walter Tirel never returned to England but his son was allowed to keep his father's land. Some people suspected that Henry and the Clare family had planned the murder of William Rufus.

Source 7

Orderic, he was a 12th century monk who lived at the time

"William sprang to his feet, mounted his horse and galloped into the wood. His brother Henry and important men were there.....As they waited for their prey, with their weapons ready, a beast suddenly ran between them. The King drew back from his place and Walter let fly an arrow. It sped quickly over the beast's back, grazing its hair, and wounded the king who was standing right in its path. He fell to the ground and died at once. Terrible shouts ran out that the King was dead.

Henry galloped at top speed to Winchester Cathedral and claimed the Royal Treasure. Many nobles made off into the woods. Some servants covered the king's body with poor cloths. They carried him like a wild boar stuck with spears to Winchester where he was quickly buried in the old church. Tirel hurried to the coast, crossed the sea and headed for his castles in France. Here he laughed at the threats of those who wanted to harm him."

Source 8

Richard Huscroft, author of Ruling England 1042-1217 written in 2016

However, the idea that the king was the victim of a murderous conspiracy is not completely fanciful. Behind it, perhaps, was the king's younger brother, Henry, or some of his supporters. The course of events immediately after Rufus's death could certainly give rise to suspicion.

The man usually thought to have shot the fatal arrow, Walter Tirel, lord of Poix, immediately fled to his lands in France; and Henry, who was in the royal hunting party when the king died, left it in order to secure the royal treasury at Winchester and claim the throne for himself.

Whether accident or assassination (and almost certainly the former), the main beneficiary of Rufus' death was his younger brother, Henry, who had been on the hunting expedition when the king had fallen.

Appendix I: Post-intervention Cromwell historical enquiry

Source A

17th Century Rules of Warfare:

1. An attacking army could give 'quarter' to the enemy. This meant if the enemy surrendered and gave up their weapons, it was wrong to kill them.
2. If an attacking army broke into a town and the defenders did not surrender, they could be all put to death.

Source B

**THIS DECLARATION IS APPOINTED TO BE PRINTED, AND
PUBLISHED THROUGHOUT ALL IRELAND: BY SPECIAL DIRECTION
FROM – OLIVER CROMWELL**

I do hereby warn and require all Officers, Soldiers, and others under my command ... Not to do any wrong or violence toward Country People, or persons whatsoever, unless they **be actually in arms or office with the Enemy**.... Being resolved, through the grace of God, to punish all that shall offend ... very severely, according to Law

Given at Dublin, the 24th of August 1649.

OLIVER CROMWELL

(Source: actual orders given by Cromwell to his soldiers)

Source C

On Monday, 10th September, 1649, Oliver Cromwell camped outside of Drogheda, with an army of 12,000 soldiers and 11 siege guns, asked the Royalist commander in Drogheda, Arthur Aston to surrender the town.

“Sir, having brought the army of the Parliament of England before this place, to reduce it to obedience, to the end that the effusion of blood may be prevented, I thought fit to summon you to deliver the same into my hands to their use. If this be refused, you will have no cause to blame me. I expect your answer and remain your servant,

O. Cromwell

Source D

Cromwell's Account of the Capture of Drogheda

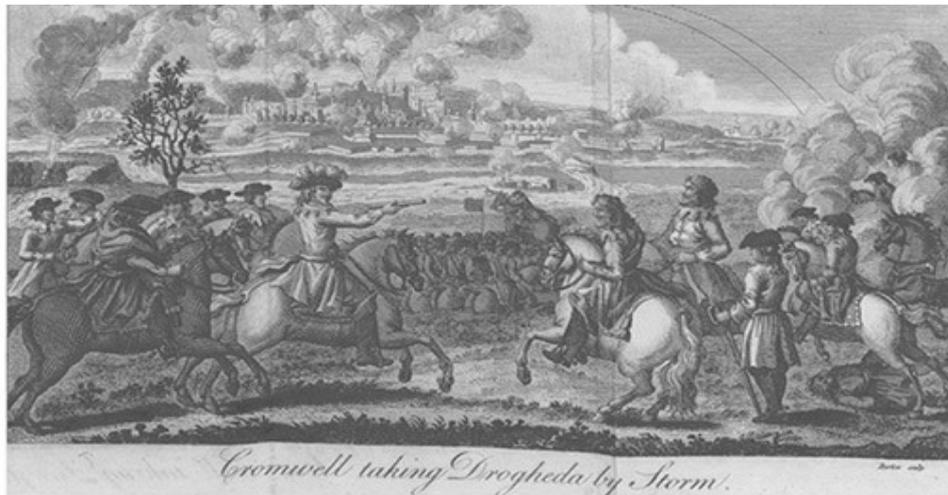
Source: A letter from Oliver Cromwell to the House of Commons, 17 September 1649.

I asked the governor to surrender, but I got no satisfactory (**good**) answer...
The guns opened two good gaps in the wall. About five o'clock in the evening, we began the attack ... and after a very hot battle they gave ground. The enemy retreated into the Mill-Mount, a place very strong ... and being in the heat of action, I forbade our men to spare any that were in arms in the town, and, I think, that night we put to the sword about 2,000 men...

The next day, the two towers were summoned (**called**) to surrender; but they refused. From one of the towers, they killed and wounded some of our men – when they submitted, (**gave in**) every tenth man of the soldiers was killed. The soldiers in the other tower were all spared.

This is a judgement of God upon these barbarous (**vicious**) wretches, who have dipped their hands in so much innocent blood; and it will stop the shedding of much blood in the future. These are the satisfactory excuses for my actions, which otherwise must give much sadness and regret..

Source F



The storming of Drogheda in Ireland by Cromwell and his troops of the New English Republic.

Original Artwork: Engraving by Barlow, January 2, 1754

Source E

A drawing made in the 1800s of the siege of Drogheda 1649



Source G

Written by Lord Clarendon, one of the Irish leaders, in 1668-70. He was in France with Charles I's son, Charles II at the time of the Irish rebellion.

“The soldiers threw down their arms on an offer of quarter. The enemy entered Mill Mount without resistance. They put every soldier to the sword and all the citizens who were Irish, man, women and child.”

Source H

From a letter written by the Marquis of Ormonde, a Royalist, on 29 September 1649. Ormond was one of the Irish leaders, but he was not present at Drogheda.

“Cromwell's soldiers promised to spare the lives of any who laid down their arms. But when they had all their power, the word ‘No quarter’ went round.”

Source I

Protestant minister, Dean Nicholas Bernard witnessed the siege at Drogheda and wrote this account:

“About a quarter of an hour after, another troop of horse came to the window, and demanded the opening of the door. The quartermaster, and himself [Bernard], with an old servant (for he had sent his wife and children out of the town) stood close together and told them that it was the minister's house and that all inside were Protestants ...”

Source J

"Each of the attackers [Cromwell's men] picked up a child and used it as a shield to keep themselves from being shot. After they had killed all in the Church, they went into the vaults underneath where all the women had hid themselves."

Written by the Anthony Wood, brother of Thomas Wood, one of Cromwell's soldiers (based on fireside stories Thomas told after the siege). Written in 1663, three years after Cromwell's death. Charles II was King at the time, and he hated Cromwell.

Source K

"The Cromwellians put all they met to the sword, having positive orders from the Lieutenant General Cromwell to give no quarter to any soldier. Their works and fort were also stormed and taken and those that defended them put to the sword also, and amongst them Sir Arthur Aston, Governor of the place. A great dispute there was amongst the soldiers for his artificial leg, which was reported to be of gold, but it proved to be of wood, his girdle being found to be the better booty, wherein two hundred pieces of gold were found quilted."

Source: General Edmund Ludlow, written in his later memoirs (1698),

Source L

Historian Philip McKeiver "A New History of Cromwell's Irish Campaign" (2007, p. 103):

'It must also be emphasised that the evidence of Cromwell himself supports the fact that no unarmed citizens were killed by Cromwell. At Youghal, months later, Cromwell replied to the Bishops' appeal of Clonmacnoise for unity, ... Cromwell asked them "give us an instance of one man, since my coming into Ireland, massacred, destroyed or banished ..."

Two very important points support Cromwell's statement. Firstly there is no doubt that a man such as Cromwell could not have made such an unambiguous (definite) statement of denial. If he had been aware that a slaughter of non-combatants (civilians) had been committed by his men. Secondly, the bishops, made no mention of those 'many inhabitants,' butchered at Drogheda, or Wexford"

Source M

Written by the English historian J.A. Froude, *The English in Ireland* (1881).

It is possible that, in such a scene, women and children may have been accidentally killed; but there is no evidence of it from any eyewitness, only general rumours. The Irish rebellion had cost nearly 600,000 lives. It was necessary to end such horrible scenes, and to end them swiftly.

Source N

Written by the children's writer R.J. Unstead, *Crown and Parliament* (1975).

“His upbringing had made him fear and hate Roman Catholics... He had heard tales of massacres of Protestants in Ireland, and had come to regard the Irish as beyond forgiveness. Cromwell's cruelty in Ireland is an everlasting blot on the name of a great man.”

Source O

Written by the English historian M. Elliot, *Tudors and Stuarts* (1961).

“The laws of war allowed him to do this, for he had given them a chance to surrender and they had refused it.”

Source P

“When the city was captured by the English, the blood of the Catholics was mercilessly shed in the streets, in the dwelling houses, and in the open fields; to none was mercy shown; not to the women, not to the aged, nor to the young....”

Source: A Jesuit priest's eye-witness account of the attack on Drogheda (1649)

Source Q

Article written for the Irish Times by Tom Reilly, author of the books “Cromwell, An Honourable Enemy” (2000) and “Was Cromwell Framed?” (2014)

Cromwell’s letter mentions no civilian massacre. He is nowhere on record as ever having ordered the deaths of civilians in any battle in his life. The actual letter that he wrote concerning Drogheda has not survived. The text comes down to us in pamphlet form.

It is alleged that he added the words ‘and many inhabitants’ to his list of those killed at Drogheda as a postscript to a letter to parliament (addressed to John Bradshaw President of the Council of State, Sept 16, 1649). The contemporary (from that time) pamphlets do not have these three words included.

It seems they were added at a later date. So it is certainly not proven that Cromwell ever wrote them. What we do know is that Cromwell’s order to his troops was to exclude the inhabitants from the battle. That order had not changed at Drogheda.

Ormonde, who was Cromwell’s chief adversary (enemy) in Ireland mentions no civilian deaths despite the fact that he wrote hundreds of letters and reports during Cromwell’s entire campaign. Nor does Inchiquin who received many of the Drogheda escapees. Both of these men wrote to each other days after the storm.

Had a civilian massacre taken place these two Irish royalists would surely have mentioned it somewhere in all of their letters as it would have suited them perfectly to castigate Cromwell even more than they did. They say nothing of it.

Lesson 2: Significance

Learning goals

- To explore historical significance

Starting points

While completing the King Rufus enquiry, it was noticed that the children sifted through the sources without attaching any importance to the type of source or when it was written. They also treated each source equally and made no attempt to sort or order the evidence in terms of what items were of significance to the historical question asked.

Activity 1: Snapshot in Time

Activity 1: Snapshot Autobiography

Children fold A4 sheet to form three panels. The first panel is the cover page. The children give it a title, for example, “The Life of Brian.” and illustrate it. The children write an “About the Author” page on the final back panel which includes their name, date of birth and a quick autobiography. In the first of the four panels, they write about the day they were born. In the other three panels, they select three important events in their lives. (total of three) important events. For each events, the children write the story of what happened, making sure to describe it from start to finish with as much detail as possible. The children illustrate each event with a small picture.

- 1) **What do the stories have in common?**
- 2) **What is different about the stories?**
- 3) **Why is your partner’s account different to yours?**

Conjectured Responses:

- Students identify significant moments in their own lives
- Students note similarities and differences
- Students relate differences to issue of significance

Linking to history through discussion:

The past is everything that ever happened to anyone anywhere. There is much too much history to remember all of it so we make choices about what is worth remembering, these are called significant events and they can be events that are significant to us personally or events that are significant on a much larger scale.

Activity 2: Snapshot in time – Another Perspective

Children select one of the events they wrote about and interview somebody at home who remembers that event. For example, a parent, grandparent, brother, sister or friend who knows about the event that was described. To ensure that they are getting the interviewee’s version, the children ask them an open question about the event, for example, “Mam, do you remember the day I started school? Can you tell me what you remember about that day?” The children take careful notes of the interview and pay particular attention the parts of their own story which are different from the one just recorded.

- **What do the two stories have in common?**
- **What is different about the two stories?**
- **What types of evidence would be necessary to corroborate that the event actually happened?**
- **What happened when you asked someone about the event? Did they agree with your version? Did they remember things differently?**

Conjectured Responses:

- Students note similarities and differences
- Students relate differences to issue of significance

Linking to history through discussion:

History is what happened in the past, just like the events in your life, different accounts may conflict or agree with one another. Significant events can be personal, for example significant events in your own lives or your family history

Activity 3: The World’s Greatest

Enquiry Question: Who is the world’s greatest person? Working in groups, children select the top five most influential (or significant) people in world history (Taken from Time Magazine) The teacher models how to approach the task of selecting the top five. The teacher deliberates on each name, asking questions about their significance

- Did this person have an unusual influence within his (her) own time?
- Will this influence last or is it just fashionable at the moment?
- Was this person outstanding in the area?
- Would history have evolved differently if this person would not have existed?

Linking to history through discussion:

Significant events often include those that resulted in great change over long periods of time for large numbers of people. 1916 is seen as a significant event in Ireland but World War II may be seen as a more significant event in Poland.

Significance also depends upon perspective and

<ul style="list-style-type: none"> • Did this person contribute significantly to the most important ideas of mankind? <p>Conjectured Responses</p> <ul style="list-style-type: none"> • Children use criteria to select and justify personalities • Students can identify why different personalities were chosen • Students relate significance to the selection of events in history 	<p>purpose. A historical person or event can acquire significance if it can be linked to bigger stories. Significance also depends on the historical question that is asked of the evidence.</p>
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Lesson 3: Using evidence

Learning goals

- To understand that an image does not always present an exact copy of the past
- To use a sourcing heuristic to read an image

Starting points
 The children using the King Rufus enquiry strongly indicated their belief that an illustration or a photograph was a “snap shot” in time and placed more emphasis on these as forms of evidence without giving any thought to the details, for example, in the case of the death of King Rufus, the illustration was created almost 900 years after the event. The dismissal of other evidence (including contemporaneous accounts) as being wrong because they did not match the illustration was evident in the arguments put forward by all but one of the children who took part. These activities also introduce children to a sourcing heuristic (developed by the researcher) which can be used for both image based and text based documents.

Activity 1: The Sourcerer’s Apprentices
 The teacher builds on the conjectures of the students who did not look at the dates to introduce a sourcing heuristic and models an approach to reading a source with the children by using think-alouds.

1	Identify the source	Who? Why? What? When? Where?
2	Contextualize the source	What was happening at the time?
3	Explore the source	What does the source say? What is happening?
4	Analyse the source	Dig deeper, explain!
5	Compare the source	Where can I find other sources to back it up?
6	Take the source further	What other questions do I have?

The teacher explains the purpose of each of the steps in the framework above and using the Confirmation 1898 photograph, models step by step.

Identify: The photo is of a class of boys making their confirmation. They are students in St. Joseph’s M.N.S., East Wall. It was taken in 1898 by a photographer named Lenehan on the 8th March. The boys are standing on the steps of a church with their headmaster Master J.F. Homan.

Contextualise: The school was newly opened and this was the first confirmation class from the school. There was no church in the area at that time so it most likely is the nearest church of St. Thomas. The area was quite poor at that time and many families were casually employed on the docks. There was a large Protestant population in the area.

Explore: There are 27 boys in the photograph. All of them are named at the bottom. Some of them may be brothers. The boys are wearing suits and polished shoes with short trousers. Some of them have caps and frills at the collars. They all have a rosette with a medal on their chests. The master is tall and thin and is wearing a suit, a tall hat and a monocle. He has a trimmed beard and a shaped moustache.

Analyse: The boys are all very well dressed because this is an important occasion, did they always dress this way? The suits look home-made which would indicate that their mothers probably could sew. The master looks quite

Linking to history through discussion:
 Despite their outward objectivity, historical photographs and images need careful handling.

To judge the significance of a source in documenting what happened in the past, we need to consider the time, context, and purpose when evaluating the interpretation which the source offers

The use of a sourcing heuristic such as ICEACT helps us to remember not to take the source at face value but to consider it in the same way a historian would

<p>stern and none of the boys are smiling. Are they afraid of him or of the camera? The boys are all Catholic as the school is a catholic school so where are the large protestant population being educated?</p> <p>Compare: The school registers lists all the boys in the photograph and identifies the Master as the principal of the school. The registers begin in 1896 so this photo was taken two years after the school was opened. The boys with the same surnames are brothers but not twins. The registers show they have the same address but a different date of birth. The church registers in St. Thomas' show the list of boys making their confirmation in March of that year.</p> <p>Take it further: What happened to these boys? I can use the census records from 1901 and 1911 to get details of their family life and how they did over the next thirteen years. William Halpin was a trade union activist and a member of the Irish Citizen Army and other records (military archives) show he was involved in the 1913 Lockout and the Easter Rising of 1916. I can search for Master Homan and find him living as a boarder in the Seabank House in 1901 and married and living in Beechmount Drive, Clontarf in 1911. His name also pops up in 1916, he was an ambulance driver with the Red Cross. Some of these boys were also involved in the 1913 Lockout.</p> <p>Conjectured responses</p> <ul style="list-style-type: none"> • Students can explain each step of ICEACT • Students use ICEACT to explore a photo 	
<p>Activity 2: The Woman on the Bus <i>Enquiry Question: Why was this photo taken?</i></p> <p>Children look at the iconic photo of Rosa Parks sitting on a bus in Montgomery taken on December 21, 1956 and discuss what they know about the photo. Some children may have seen the photo before and believe it was taken on the day of the event. Some children may know the details of the Montgomery Bus Boycott.</p> <p>Children examine the photo using the mnemonic ICE ACT for details of what might be happening in the photo and record these on an ICE ACT writing frame. Children read an account from Rosa Parks' autobiography of the day she refused to give up her seat one Thursday afternoon in December 1955. Children compare the photo to the account noting differences.</p> <ul style="list-style-type: none"> • What things are the same in both pieces of evidence? • What things are different? • Which source do you think is more accurate? Give reasons <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students use ICEACT to explore a photo • Students use ICEACT to explore a Rosa's account • Students a) find and b) explain discrepancies in the accounts 	<p>Linking to history through discussion:</p> <p>It is important to be mindful that, while sometimes the photographer may simply be in the right place at the right time, more often than not, photographs were (and still are) taken with a certain purpose in mind. It is the photographer, after all, who determines the angle, the framing, the inclusion or indeed, the omission of details in the final image</p>

Lesson 4: Sustain your claim!

Learning goals

- To explore the components of a historical argument
- To support historical claims with evidence
- To explore the importance of historical questions in the selection of evidence

Starting points

The children in the pre-test came to very solid conclusions on whether the death of King Rufus was an accident or murder however there was no use made of the sources to reach those conclusions and differences of opinion were settled based on whose voice was loudest and who was most persistent.

These series of activities aim to introduce the idea of historical argumentation backed up by evidence

Activity 2: The Argument Clinic

Children look at a section of the Monty Python sketch “The Argument Clinic (from 1:17 to 3:47). Children are asked to watch again for the character’s definition of an argument. Children discuss the argument in the sketch.

- 1) **What is a contradiction?**
- 2) **Is it an argument if I keep saying “no, it isn’t”?**
- 3) **What do you think “An argument is a connected series of statements intended to establish a proposition” means?**

Conjectured Responses:

- Students explain the difference between contradiction and an argument

Activity 3: How do we know the world is round?

The teacher poses the above question to the children and asks them to come up with some statements or claims that prove the world is round. The teacher uses this example to explain how the claim the earth is round is backed up by the statements they have given.

Conjectured responses:

- Students sort the cards according to whether they support the claim or not

Activity 4: The Greatest Class of All

The teacher gives the children a card with the claim “Our class is the greatest” along with a series of smaller cards. Some of these are written to be evidence to support the claim and some of the statements do not belong. The children determine which cards are the evidence and which cards do not support the claim. There are also a few blank cards for children to write their own evidence to support the claim.

Conjectured responses:

- Students sort the cards according to whether they support the claim or not

Activity 5: Why did Titanic sink? Why did so many passengers die?

Enquiry Question: Why did Titanic sink? Why did so many passengers die?

The children are given a card sort to answer the question

Why did the Titanic sink?

They work on groups of four to arrange the cards in order of importance (in terms of answering the question asked).

The children discuss among themselves why the cards are placed in a specific order.

Conjectured responses:

- Students arrange the cards in order of significance to answer the question
- They then rearrange the cards to answer the second question
- Students explain that historical arguments are based on evidence.

Linking to history through discussion:

History is an argument about interpretations of past events.

These events cannot be examined without interpretation, and historians often reach different and conflicting conclusions.

Historical arguments are claims that are back by evidence.

Appendix K: HLT 2

Lesson 1: Multiple Perspectives	
<p>Learning goals</p> <ul style="list-style-type: none"> To understand how multiple accounts are formed To explore multiple accounts of an event 	
<p>Starting points</p> <p>This activity allows the children to explore the nature of sources in history with particular reference to conflicting sources of the same event.</p> <p>In the interviews and questionnaires, the children saw history quite simply as “the past” or a series of facts. As outlined in the framework of the learning trajectory, this lesson begins with uncovering and challenging current epistemic beliefs.</p>	
<p>Activity 1: One way or Another</p> <p>Warm up activities:</p> <p>Teacher asks the children</p> <ol style="list-style-type: none"> Are two different accounts of the same event possible? Can there be two versions of the same historical event? <p>Conjectured responses:</p> <ul style="list-style-type: none"> At least half of the students will recognise there are two sides to a story Most students will consider that there is only one version of a historical event 	<p>Linking to history through discussion</p> <p>History is about interpretation and there are many interpretations of historical events.</p>
<p>Activity 2: Where’s the chair?</p> <p>Teacher asks the children:</p> <ol style="list-style-type: none"> Can stories change over time? Can memories change over time? <p>Activity</p> <p>Teacher reads a list of words that all fit into a certain category (for example: seat, couch, stool, recliner, sofa, bench, pew, throne, car-seat, settee) and then asks the students to write down as many words as they can recall immediately after. The word "chair" is never included in the list but it is the target word - it is a word that fits perfectly into the category, but it not included in the list. Later, the lists are checked.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> The majority of the students will include "chair" on their list and insist that it was said. Students can explain why the list was mis-remembered 	<p>Linking to history through discussion</p> <p>This is important to remember when we are looking at sources of information. Sometimes stories and memories can change over time so when studying history, we need to check when the source was created. Was it soon after the event or much later?</p>

<p>Activity 3: The Fight The students imagine a scenario in which they are the principal of a school and there was a fight in the yard during break. There were lots of witnesses to the fight but unfortunately, there are different accounts of who started it, when it started and who was involved yet none of the witnesses are lying. The children work in groups to answer the following questions:</p> <ol style="list-style-type: none"> 1) How could there be different stories of the event if no one is lying? 2) Who are the different people who might have seen this fight? 3) What might make one person's story more believable than another person's? <p>Children model a situation showing the lunch time fight using a scenario given by the teacher.</p> <p>Brief 1: witness is standing some steps behind the two involved when event occurs and does not see John kick Paul. Brief 2: witness arrives after the argument has begun and misses the start but sees Paul pushing John to the ground. Brief 3: witness is John's best friend and leaves out the fact that John pushed Paul first. Brief 4: Witness was not really paying attention and is unsure of the facts but has heard the story from the other witnesses.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students recognise there are multiple viewpoints of an event • Students identify how multiple accounts are formed • Most students equate historical analysis to detective work 	<p>Linking to history through discussion Historians, in trying to figure out what happened in the past, do the same work. Just like the principal, there's no way to actually go back in time to witness it. All that historians have to work with is the remaining evidence.</p>
<p>Activity 4: Do you see what I see? Children look at a selection of optical illusions and call out what they immediately see. Differences in what the children notice about the illusions are recorded</p> <ul style="list-style-type: none"> • Did everyone notice the same thing first? • Why did we all see different things? • How does this tie in with studying history? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students explain that differences are because of differing perspectives 	<p>Linking to history through discussion When studying history, we can view historical events, personalities, developments, cultures and societies from a range of different perspectives</p>
<p>Activity 6: The Fighting Vikings <i>Enquiry Question: What were the Vikings really like?</i> The children are presented with two short accounts describing the Vikings. One written by an Irish monk and the other written by a Persian explorer. The teacher models how to approach each source by identifying the source, noting the significance of each and by reading and pausing to think about what each source is saying. The children work in groups to answer the following questions:</p> <ul style="list-style-type: none"> • What is the Persian explorer saying about the Vikings? • What is the Irish monk saying about the Vikings? • How could there be different accounts about the Vikings if no one is lying? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students explain differing accounts as due to differing perspectives • Students refer to the importance of 'sources' (may not use this word) 	<p>Linking to history through discussion Sourcing is the act of questioning a piece of evidence. When you source, you ask yourself how people's perspectives shape their story. This doesn't mean that a person is lying but could mean that he or she has a different perspective. They still might have something valuable to contribute to your understanding of what happened in the past</p>

Lesson 2: Significance

<p>Learning goals</p> <ul style="list-style-type: none"> To explore historical significance 											
<p>Starting points</p> <p>While completing the King Rufus enquiry, it was noticed that the children sifted through the sources without attaching any importance to the type of source or when it was written. They also treated each source equally and made no attempt to sort or order the evidence in terms of what items were of significance to the historical question asked.</p>											
<p>Activity 1: Snapshot in Time</p> <p>Teacher asks the children to write an account of what happened at the last break-time.</p> <ul style="list-style-type: none"> What do the stories have in common? What is different about the stories? Why is your partner’s account different to yours? What types of evidence would be necessary to prove that the event actually happened? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> Students create an account of the last lunch break Students identify similarities in the stories Students identify differences Most students give reasons to explain differences 	<p>Linking to history through discussion:</p> <p>The past is everything that ever happened to anyone anywhere. There is much too much history to remember all of it so we make choices about what is worth remembering, these are called significant events and they can be events that are significant to us personally or events that are significant on a much larger scale.</p>										
<p>Activity 2: Big Fish Little Fish</p> <p>Children are asked to list some significant events in their own lives. Differences in selections are discussed. The teacher models and explains the ranking scale below</p> <p>Scale of significance</p> <p>Who would judge it significant?</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">Global</td> <td>Everyone in the whole world should know it</td> </tr> <tr> <td>National</td> <td>Everyone in the whole country should know it</td> </tr> <tr> <td>Local</td> <td>Everyone in the local area should know about it</td> </tr> <tr> <td>Individual</td> <td>Only the family of the people involved should know about it</td> </tr> <tr> <td>Insignificant</td> <td>It’s just not worth remembering</td> </tr> </table> <p>How significant are these events and people?</p> <ol style="list-style-type: none"> The 1916 Rising The building of the Sean O’Casey Centre The first person to go into outer space The person who invented the computer The birth of my grandfather Women receiving the right to vote in national elections for the first time The invention of gunpowder The day I ate a tuna sandwich for lunch <p>Conjectured Responses</p> <ul style="list-style-type: none"> Students choose the correct rating for each event. 	Global	Everyone in the whole world should know it	National	Everyone in the whole country should know it	Local	Everyone in the local area should know about it	Individual	Only the family of the people involved should know about it	Insignificant	It’s just not worth remembering	<p>Linking to history through discussion:</p> <p>What is considered to be of significance usually depends on who is considering the event. That could be historians, governments, teachers, textbook writers, communities, families. For example, the 1916 Rising is considered a very important event in Ireland but it may not even be known about in China.</p> <p>Significant events can also be personal, for example significant events in your own lives or your family history.</p>
Global	Everyone in the whole world should know it										
National	Everyone in the whole country should know it										
Local	Everyone in the local area should know about it										
Individual	Only the family of the people involved should know about it										
Insignificant	It’s just not worth remembering										
<p>Activity 3: Ireland’s Greatest/The World’s Greatest</p> <p><i>Enquiry Question: Who is the greatest?</i></p> <p>Children are given a selection of Irish historical figures (taken from a public poll Ireland’s Greatest in 2010) and work in groups to place 5 of the figures on the pyramids in order of significance. The teacher models how to approach the task of selecting the top five. The teacher deliberates on each name, asking questions about their significance</p>	<p>Linking to history through discussion:</p> <p>Significant events in history often include those that resulted in great change over long periods of time</p>										

<ul style="list-style-type: none"> • Did this person have an unusual influence within his (her) own time? • Will this influence last or is it just fashionable at the moment? • Was this person outstanding in the area? • Would history have evolved differently if this person would not have existed? • Did this person contribute significantly to the most important ideas of mankind? <p>Groups must be able to justify the order they have chosen. The children compare their results with the actual results of the poll. Children are asked to work in groups to select Ireland's/The World's most significant people. The teacher models how to approach the task by deliberating on a few names and asking questions about their significance</p> <p>Groups must be able to justify the order they have chosen.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Children use the rating scale (independent of teacher) to select and justify personalities • Students can identify why different personalities were chosen • Students relate significance to the selection of events in history 	<p>for large numbers of people or are considered to be significant turning points.</p> <p>Significance also depends upon perspective and purpose.</p>
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Lesson 3: Using evidence

<p>Learning goals</p> <ul style="list-style-type: none"> • To understand that an image does not always present an exact copy of the past • To use a sourcing heuristic to read an image 	
<p>Starting points</p> <p>The children using the King Rufus enquiry strongly indicated their belief that an illustration or a photograph was a “snap shot” in time and placed more emphasis on these as forms of evidence without giving any thought to the details, for example, in the case of the death of King Rufus, the illustration was created almost 900 years after the event. The dismissal of other evidence (including contemporaneous accounts) as being wrong because they did not match the illustration was evident in the arguments put forward by all but one of the children who took part. These activities also introduce children to a sourcing heuristic (developed by the researcher) which can be used for both image based and text based documents.</p>	
<p>Activity 1: Look Twice</p> <ul style="list-style-type: none"> • Can the camera lie? <p>Children discuss their thoughts on the veracity of photographs</p> <p>Conjectured Responses</p> <ul style="list-style-type: none"> • A photograph gives an accurate account of what happened (unless the image has been edited) <p>Children examine a series of photographs designed to make the viewer look twice to figure out what is going on. Children explain how the photos were created.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • A photograph gives an accurate account of what happened (unless the image has been edited) • Students explain how the ‘look twice’ photographs were created • Students understand that photographs sometimes do not tell the whole story 	<p>Linking to history through discussion:</p> <p>Despite their outward objectivity, historical photographs and images need careful handling.</p>
<p>Activity 2: Listen and Draw</p> <p>Children close their eyes and are asked to visualise what is happening as they listen to an eyewitness account of inside the General Post Office during the Easter Rising in 1916. Children draw what they imagined as they</p>	

<p>listened to the account. Children move around the classroom to look at each other's images.</p> <ul style="list-style-type: none"> • Are all your illustrations the same? • What do they have in common? • How are they different? • We all listened to the same account so why are your illustrations not the same? <p>Conjectured Responses</p> <ul style="list-style-type: none"> • Students note the differences in images • Students can account for differences in the sketches • Students identify the importance of questioning a source 																			
<p>Activity 3: Shall I compare thee? The children are shown two paintings of events during the 1916 Rising. The first is "Birth of the Republic" by Walter Paget. Walter Paget was an English man who was not in Dublin during the Rising. His painting depicts the inside of the General Post Office and key figures of the Rising are in the painting. The second painting is "The Arrest" painted by Margaret Fox. Margaret Fox was in Dublin during Easter Week and witnessed the surrender of Countess Markievicz. She immediately began to sketch the scene and finished the drawing later in her studio. The children explore and discuss both paintings in groups of four.</p> <ul style="list-style-type: none"> • Which of these paintings gives the most accurate account of the event depicted? • What reasons do you give for this? <p>Conjectured Responses</p> <ul style="list-style-type: none"> • Students recognise the importance of the checking the date of a source 	<p>Linking to history through discussion: To judge the significance of a source in documenting what happened in the past, we need to consider the time, context, and purpose when evaluating the interpretation which the source offers</p>																		
<p>Activity 4: The Sourcerer's Apprentices The teacher builds on the conjectures of the students who did not look at the dates to introduce a sourcing heuristic and models an approach to reading a source with the children by using think-alouds.</p> <table border="1"> <tr> <td>1</td> <td>Identify the source</td> <td>Who? Why? What? When? Where?</td> </tr> <tr> <td>2</td> <td>Contextualize the source</td> <td>What was happening at the time?</td> </tr> <tr> <td>3</td> <td>Explore the source</td> <td>What does the source say? What is happening?</td> </tr> <tr> <td>4</td> <td>Analyse the source</td> <td>Dig deeper, explain!</td> </tr> <tr> <td>5</td> <td>Compare the source</td> <td>Where can I find other sources to back it up?</td> </tr> <tr> <td>6</td> <td>Take the source further</td> <td>What other questions do I have?</td> </tr> </table> <p>The teacher explains the purpose of each of the steps in the framework above and using the Confirmation 1898 photograph, models step by step.</p> <p>Identify: The photo is of a class of boys making their confirmation. They are students in St. Joseph's M.N.S., East Wall. It was taken in 1898 by a photographer named Lenehan on the 8th March. The boys are standing on the steps of a church with their headmaster Master J.F. Homan.</p> <p>Contextualise: The school was newly opened and this was the first confirmation class from the school. There was no church in the area at that time so it most likely is the nearest church of St. Thomas. The area was quite poor at that time and many families were casually employed on the docks.</p> <p>Explore: There are 27 boys in the photograph. All of them are named at the bottom. Some of them may be brothers. The boys are wearing suits and polished shoes with short trousers. Some of them have caps and frills at the collars. They all have a rosette with a medal on their chests. The master is tall and thin and is wearing a suit, a tall hat and a monocle. He has a trimmed beard and a shaped moustache.</p>	1	Identify the source	Who? Why? What? When? Where?	2	Contextualize the source	What was happening at the time?	3	Explore the source	What does the source say? What is happening?	4	Analyse the source	Dig deeper, explain!	5	Compare the source	Where can I find other sources to back it up?	6	Take the source further	What other questions do I have?	<p>Linking to history through discussion: The use of a sourcing heuristic such as ICEACT helps us to remember not to take the source at face value but to consider it in the same way a historian would</p>
1	Identify the source	Who? Why? What? When? Where?																	
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6	Take the source further	What other questions do I have?																	

<p>Analyse: The boys are all very well dressed, did they always dress this way? The suits look home-made which would indicate that their mothers probably could sew. The master looks quite stern and none of the boys are smiling. Are they afraid of him or of the camera? The boys are all Catholic as the school is a catholic school</p> <p>Compare: The school registers lists all the boys in the photograph and identifies the Master as the principal of the school. The registers begin in 1896 so this photo was taken two years after the school was opened. The boys with the same surnames are brothers but not twins. The registers show they have the same address but a different date of birth. The church registers in St. Thomas’ show the list of boys making their confirmation in March of that year.</p> <p>Take it further: What happened to these boys? I can use the census records from 1901 and 1911 to get details of their family life and how they did over the next thirteen years. I can search for Master Homan and find him living as a boarder in the Seabank House in 1901 and married and living in Beechmount Drive, Clontarf in 1911. His name also pops up in 1916, he was an ambulance driver with the Red Cross. Some of these boys were also involved in the 1913 Lockout.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Most students can explain each step of ICEACT • Some may need more support • Students use ICEACT to explore a photo correctly 	
<p>Activity 5: The Woman on the Bus <i>Enquiry Question: Why was this photo taken?</i> Children look at the iconic photo of Rosa Parks sitting on a bus in Montgomery taken on December 21, 1956 and discuss what they know about the photo.</p> <p>Conjectured Responses</p> <ul style="list-style-type: none"> • Some children may have seen the photo before and believe it was taken on the day of the event. • Some children may know the details of the Montgomery Bus Boycott. • Some children may not have seen the photo or heard of the event before. <p>Children examine the photo using the mnemonic ICE ACT for details of what might be happening in the photo and record these on an ICE ACT writing frame. Children read an account from Rosa Parks’ autobiography of the day she refused to give up her seat one Thursday afternoon in December 1955. Children compare the photo to the account noting differences.</p> <ul style="list-style-type: none"> • What things are the same in both pieces of evidence? • What things are different? • Which source do you think is more accurate? Give reasons <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students can explain each step of ICEACT • Students use ICEACT to explore a photo • Students use ICEACT to explore Rosa’s account • Most students identify discrepancies in two accounts • Most students explain discrepancies in two accounts • Most students identify reasons why sourcing an image or a document is important to the study of history 	<p>Linking to history through discussion: It is important to be mindful that, while sometimes the photographer may simply be in the right place at the right time, more often than not, photographs were (and still are) taken with a certain purpose in mind. It is the photographer, after all, who determines the angle, the framing, the inclusion or indeed, the omission of details in the final image</p>

Lesson 4: Sustain your claim!

<p>Learning goals</p> <ul style="list-style-type: none"> To explore the components of a historical argument To support historical claims with evidence To explore the importance of historical questions in the selection of evidence 	
<p>Starting points</p> <ul style="list-style-type: none"> The children in the pre-test came to very solid conclusions on whether the death of King Rufus was an accident or murder however there was no use made of the sources to reach those conclusions and differences of opinion were settled based on whose voice was loudest and who was most persistent. These series of activities aim to introduce the idea of historical argumentation backed up by evidence 	
<p>Activity 1: What is an argument? Teacher asks the children:</p> <ul style="list-style-type: none"> What is an argument? If I just keep contradicting what you say, is that an argument? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> Most students describe arguing as a fight between two people Most students view contradiction as an argument 	<p>Linking to history through discussion: History is an argument about interpretations of past events. These events cannot be examined without interpretation, and historians often reach different and conflicting conclusions. Historical arguments are claims that are back by evidence.</p>
<p>Activity 2: The Argument Clinic Children look at a section of the Monty Python sketch “The Argument Clinic (from 1:17 to 3:47). Children are asked to watch again for the character’s definition of an argument. Children discuss the argument in the sketch.</p> <ul style="list-style-type: none"> What is a contradiction? Is it an argument if I keep saying “no, it isn’t”? What do you think “An argument is a connected series of statements intended to establish a proposition” means? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> Students explain the difference between contradiction and an argument 	
<p>Activity 3: How do we know the world is round? The teacher poses the above question to the children and asks them to come up with some statements or claims that prove the world is round.</p> <p>Conjectured responses:</p> <ul style="list-style-type: none"> Students identify a series of statements to back their claim <p>The teacher uses this example to explain how the claim the earth is round is backed up by the statements they have given.</p>	
<p>Activity 4: The Greatest Class of All The teacher gives the children a card with the claim “Our class is the greatest” along with a series of smaller cards. Some of these are written to be evidence to support the claim and some of the statements do not belong. The children determine which cards are the evidence and which cards do not support the claim. There are also a few blank cards for children to write their own evidence to support the claim.</p> <p>Conjectured responses:</p> <ul style="list-style-type: none"> Students sort the cards according to whether they support the claim or not 	
<p>Activity 5: Why did Titanic sink? <i>Enquiry Question: Why did Titanic sink?</i> The children are given a card sort to answer the question. They work on groups of four to arrange the cards in order of importance (in terms of answering the question asked). The children discuss among themselves why the cards are placed in a specific order.</p> <p>Conjectured responses: Students arrange the cards in order of significance to answer the question Students explain that historical arguments are based on evidence.</p>	

Appendix L: HLT 3

Lesson 1: Multiple Perspectives	
<p>Learning goals</p> <ul style="list-style-type: none"> To explore multiple accounts of an event To understand how multiple accounts are formed 	
<p>Starting points</p> <p>This activity allows the children to explore the nature of sources in history with particular reference to conflicting sources of the same event. In the interviews and questionnaires, the children saw history quite simply as “the past” or a series of facts. As outlined in the framework of the learning trajectory, this lesson begins with uncovering and challenging current epistemic beliefs.</p>	
<p>Activity 1: One way or Another</p> <p>Teacher asks the children</p> <ul style="list-style-type: none"> Are two different accounts of the same event possible? Can there be two versions of the same historical event? Can stories change over time? Can memories change over time? <p>Conjectured responses:</p> <ul style="list-style-type: none"> At least half of the students will recognise there are two sides to a story Most students will consider that there is only one version of a historical event Most children agree that stories cannot change over time Most children agree that memories cannot change over time 	<p>Linking to history through discussion</p> <p>History is about interpretation and there are many interpretations of historical events.</p>
<p>Activity 2: Where’s the chair?</p> <p>Teacher reads a list of words that all fit into a certain category (for example: seat, couch, stool, recliner, sofa, bench, pew, throne, car-seat, settee.) and then asks the students to write down as many words as they can recall immediately after. The word "chair" is never included in the list but it is the target word - it is a word that fits perfectly into the category, but it not included in the list. Later, the lists are checked.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> The majority of the students will include "chair" on their list and insist that it was said. Students can explain why the list was mis-remembered Most students make the link between the activity and doing history 	<p>Linking to history through discussion</p> <p>This is important to remember when we are looking at sources of information. Sometimes stories and memories can change over time so when studying history, we need to check when the source was created. Was it soon after the event or much later?</p>
<p>Activity 3: The Fight</p> <p>The students imagine a scenario in which they are the principal of a school and there was a fight in the yard during break. There were lots of witnesses to the fight but unfortunately, there are different accounts of who started it, when it started and who was involved yet none of the witnesses are lying.</p> <p>The children work in groups to answer the following questions:</p> <ul style="list-style-type: none"> How could there be different stories of the event if no one is lying? Who are the different people who might have seen this fight? What might make one person’s story more believable than another person’s? <p>Children model a situation showing the lunch time fight using a scenario given by the teacher.</p> <p>Brief 1: witness is standing some steps behind the two involved when event occurs and does not see John kick Paul.</p> <p>Brief 2: witness arrives after the argument has begun and misses the start but sees Paul pushing John to the ground.</p>	<p>Linking to history through discussion</p> <p>Historians, in trying to figure out what happened in the past, do the same work. Just like the principal, there’s no way to actually go back in time to witness it. All that historians have to work with is the remaining evidence.</p>

<p>Brief 3: witness is John’s best friend and leaves out the fact that John pushed Paul first. Brief 4: Witness was not really paying attention and is unsure of the facts but has heard the story from other witnesses.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Most students recognise there are multiple viewpoints of this event • Most students identify ways in which multiple accounts of this event were formed • Most students make the link between the target (interpreting historical evidence) and the analogy (investigating the fight) 	
<p>Activity 4: Do you see what I see? Children look at a selection of optical illusions and call out what they immediately see. Differences in what the children notice about the illusions are recorded</p> <ul style="list-style-type: none"> • Did everyone notice the same thing first? • Why did we all see different things? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students note they see different images • Students explain that differences are because of differing perspectives 	<p>Linking to history through discussion When studying history, we can view historical events, personalities, developments, cultures and societies from a range of different perspectives</p>
<p>Activity 5: Darla Children look at a clip from Finding Nemo and discuss what happens in the clip. Darla enters the dentist office, Nemo (her birthday present) plays dead and the dentist is about to dispose of him when Nemo’s dad arrives in the beak of a big bird.</p> <ul style="list-style-type: none"> • Can you tell the events from Nemo’s perspective? • How might Darla recall the event? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students can retell the story from Darla’s viewpoint. • Most students explain that there are many ways to interpret the same event • Most students make the link between the activity and history 	<p>Linking to history through discussion Sourcing is the act of questioning a piece of evidence. You also need to ask yourself how people’s perspectives shape their story. This doesn’t mean that a person is lying but could mean that he or she has a different perspective. They still might have something valuable to contribute to your understanding of what happened in the past</p>
<p>Activity 6: The Fighting Vikings <i>Enquiry Question: What were the Vikings really like?</i> The children are presented with two short accounts describing the Vikings. One written by an Irish monk and the other written by a Persian explorer. The teacher models how to approach each source by identifying the source, noting the significance of each and by reading and pausing to think about what each source is saying. The children work in groups to answer the following questions:</p> <ul style="list-style-type: none"> • What is the Persian explorer saying about the Vikings? • What is the Irish monk saying about the Vikings? • How could there be different accounts about the Vikings if no one is lying? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Most groups will write about different perspectives or experiences of the Vikings as a reason for differing accounts. • Some groups may find it difficult to explain the difference in accounts and may require further questioning. • Students refer to the importance of ‘sources’ (may not use this word) 	

Lesson 2: Significance

<p>Learning goals</p> <ul style="list-style-type: none"> To explore historical significance 											
<p>Starting points</p> <p>While completing the King Rufus enquiry, it was noticed that the children sifted through the sources without attaching any importance to the type of source or when it was written. They also treated each source equally and made no attempt to sort or order the evidence in terms of what items were of significance to the historical question asked.</p>											
<p>Activity 1: Snapshot in Time</p> <p>Teacher asks the children to write an account of what happened at the last break-time.</p> <ol style="list-style-type: none"> What do the stories have in common? What is different about the stories? Why is your partner's account different to yours? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> Students note similarities and differences Students note that accounts differ due to significance 	<p>Linking to history through discussion:</p> <p>The past is everything that ever happened to anyone anywhere. There is much too much history to remember all of it so we make choices about what is worth remembering, these are called significant events and they can be events that are significant to us personally or events that are significant on a much larger scale.</p>										
<p>Activity 2: Big Fish Little Fish</p> <p>Children are asked to list some significant events in their own lives. Differences in selections are discussed. Using a list of eight events, the teacher models one approach to looking at significance. The teacher deliberates on each point, asking questions about their significance. Each point is discussed as a whole class.</p> <p>Scale of significance</p> <p>Who would judge it significant?</p> <table border="0"> <tr> <td>Global</td> <td>Everyone in the world should know about it</td> </tr> <tr> <td>National</td> <td>Everyone in the country where it occurred should know about it</td> </tr> <tr> <td>Local</td> <td>Everyone in the region or who belongs to a specific group(s) should study it</td> </tr> <tr> <td>Individual</td> <td>Only the descendants and family of the people involved need know about it</td> </tr> <tr> <td>Not at all significant</td> <td>It's not really worth remembering</td> </tr> </table> <p>How significant are these events and people?</p> <ol style="list-style-type: none"> The 1916 Rising The building of the Sean O'Casey Centre The first person to go into outer space The person who invented the computer The birth of my grandfather Women receiving the right to vote in national elections for the first time The invention of gunpowder The day I ate a tuna sandwich for lunch <p>Conjectured Responses</p> <ul style="list-style-type: none"> Students identify significant moments in their lives Students choose the correct rating for each event. A few students may need further examples of personal significance and national significance. 	Global	Everyone in the world should know about it	National	Everyone in the country where it occurred should know about it	Local	Everyone in the region or who belongs to a specific group(s) should study it	Individual	Only the descendants and family of the people involved need know about it	Not at all significant	It's not really worth remembering	<p>Linking to history through discussion:</p> <p>What is considered to be of significance usually depends on who is considering the event. That could be historians, governments, teachers, textbook writers, communities, families. For example, the 1916 Rising is considered a very important event in Ireland but it may not even be known about in China.</p> <p>Significant events can also be personal, for example significant events in your own lives or your family history. (Children are asked to name significant events in Irish history)</p>
Global	Everyone in the world should know about it										
National	Everyone in the country where it occurred should know about it										
Local	Everyone in the region or who belongs to a specific group(s) should study it										
Individual	Only the descendants and family of the people involved need know about it										
Not at all significant	It's not really worth remembering										
<p>Activity 3: Ireland's Greatest/The World's Greatest</p> <p><i>Enquiry Question: Who is the most significant person in the world/Ireland?</i></p> <p>Children are asked to work in groups to select Ireland's/The World's most significant people. The teacher models how to approach the task by deliberating on a few names and asking questions about their significance. Groups must be able to justify the order they have chosen.</p>	<p>Linking to history through discussion:</p> <p>Significant events in history often include those that resulted in great change over long periods of time for large numbers of people or are considered to be significant turning points.</p>										

<p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Children use the rating scale (independent of teacher) to select and justify personalities • Students relate significance to the selection of events in history 	<p>Significance also depends upon perspective and purpose.</p>
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Lesson 3: Using evidence	
<p>Learning goals</p> <ul style="list-style-type: none"> • To understand that an image does not always present an exact copy of the past • To use a sourcing heuristic to read an image 	
<p>Starting points</p> <p>The children using the King Rufus enquiry strongly indicated their belief that an illustration or a photograph was a “snap shot” in time and placed more emphasis on these as forms of evidence without giving any thought to the details, for example, in the case of the death of King Rufus, the illustration was created almost 900 years after the event. The dismissal of other evidence (including contemporaneous accounts) as being wrong because they did not match the illustration was evident in the arguments put forward by all but one of the children who took part. These activities also introduce children to a sourcing heuristic (developed by the researcher) which can be used for both image based and text based documents.</p>	
<p>Activity 1: Look Twice</p> <ul style="list-style-type: none"> • Can the camera lie? <p>Children discuss their thoughts on the veracity of photographs</p> <p>Conjectured Responses</p> <ul style="list-style-type: none"> • A photograph gives an accurate account of what happened (unless the image has been edited) <p>Children examine a series of photographs designed to make the viewer look twice to figure out what is going on. Children explain how the photos were created.</p> <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Students explain how the ‘look twice’ photographs were created • Students understand that photographs sometimes do not tell the whole story 	<p>Linking to history through discussion:</p> <p>Linking to history through discussion:</p> <p>Despite their outward objectivity, historical photographs and images need careful handling.</p>
<p>Activity 2: Listen and Draw</p> <p>Children close their eyes and are asked to visualise what is happening as they listen to an eyewitness account of inside the General Post Office during the Easter Rising in 1916. Children draw what they imagined as they listened to the account. Children move around the classroom to look at each other’s images.</p> <ol style="list-style-type: none"> 1) Are all your illustrations the same? 2) What do they have in common? 3) How are they different? 4) We all listened to the same account so why are your illustrations not the same? <p>Conjectured Responses</p> <ul style="list-style-type: none"> • All students will agree that the illustrations are very different from each other • All children will be able to describe items that their artwork has in common e.g., The G.P.O, flames, guns, flags, people. • All children will be able to describe how the drawings differ: placement of characters, inclusion of new characters, different objects, some drawn inside, some drawn outside. • Most children will be able to explain that their own illustration was dependent on their own imagination because they were not present at the event. 	
<p>Activity 3: Shall I compare thee?</p> <p>The children are shown two paintings of events during the 1916 Rising. The first is “Birth of the Republic” by Walter Paget. Walter Paget was an English</p>	<p>Linking to history through discussion:</p>

man who was not in Dublin during the Rising. His painting depicts the inside of the General Post Office and key figures of the Rising are in the painting. The second painting is “The Arrest” painted by Margaret Fox. Margaret Fox was in Dublin during Easter Week and witnessed the surrender of Countess Markievicz. She immediately began to sketch the scene and finished the drawing later in her studio.

The children explore and discuss both paintings in groups of four.

- Which of these paintings gives the most accurate account of the event depicted?
- What reasons do you give for this?

Conjectured Responses

- Most students will recognise the Paget painting but will be unfamiliar with the Fox painting.
- Most students will also be more familiar with the events which took place inside the G.P.O. though they have encountered Countess Markievicz in their earlier study of Dr. Kathleen Lynn.
- Some students will recognise that Paget’s painting is an artist’s impression of what happened whereas Fox was an eyewitness to the events surrounding the surrender of Countess Markievicz.
- A few students will not use the dates of the paintings or the location of the artists as a reason for their choice and may refer to things like the amount of details

To judge the significance of a source in documenting what happened in the past, we need to consider the time, context, and purpose when evaluating the interpretation which the source offers

Activity 4: The Sourcerer’s Apprentices

The teacher builds on the conjectures of the students who did not look at the dates to introduce a sourcing heuristic and models an approach to reading a source with the children by using think alouds.

The teacher explains the purpose of each of the steps in the framework above and using the Confirmation 1898 photograph, models step by step.

1	Identify the source	Who? Why? What? When? Where?
2	Contextualize the source	What was happening at the time?
3	Explore the source	What does the source say? What is happening?
4	Analyse the source	Dig deeper, explain!
5	Compare the source	Where can I find other sources to back it up?
6	Take the source further	What other questions do I have?

Linking to history through discussion:
The use of a sourcing heuristic such as ICEACT helps us to remember not to take the source at face value but to consider it in the same way a historian would

Identify: The photo is of a class of boys making their confirmation. They are students in St. Joseph’s M.N.S., East Wall. It was taken in 1898 by a photographer named Lenehan on the 8th March. The boys are standing on the steps of a church with their headmaster Master J.F. Homan.

Contextualise: The school was newly opened and this was the first confirmation class from the school. There was no church in the area at that time so it most likely is the nearest church of St. Thomas. The area was quite poor at that time and many families were casually employed on the docks. There was a large Protestant population in the area.

Explore: There are 27 boys in the photograph. All of them are named at the bottom. Some of them may be brothers. The boys are wearing suits and polished shoes with short trousers. Some of them have caps and frills at the collars. They all have a rosette with a medal on their chests. The master is tall and thin and is wearing a suit, a tall hat and a monocle. He has a trimmed beard and a shaped moustache.

Analyse: The boys are all very well dressed because this is an important occasion, did they always dress this way? The suits look home-made which would indicate that their mothers probably could sew. The master looks quite stern and none of the boys are smiling. Are they afraid of him or of the camera? The boys are all Catholic as the school is a catholic school so where are the large protestant population being educated?

<p>Compare: The school registers lists all the boys in the photograph and identifies the Master as the principal of the school. The registers begin in 1896 so this photo was taken two years after the school was opened. The boys with the same surnames are brothers but not twins. The registers show they have the same address but a different date of birth. The church registers in St. Thomas' show the list of boys making their confirmation in March of that year.</p> <p>Take it further: What happened to these boys? I can use the census records from 1901 and 1911 to get details of their family life and how they did over the next thirteen years. William Halpin was a trade union activist and a member of the Irish Citizen Army and other records (military archives) show he was involved in the 1913 Lockout and the Easter Rising of 1916. I can search for Master Homan and find him living as a boarder in the Seabank House in 1901 and married and living in Beechmount Drive, Clontarf in 1911. His name also pops up in 1916, he was an ambulance driver with the Red Cross. Some of these boys were also involved in the 1913 Lockout.</p>	
<p>Activity 5: The Woman on the Bus Enquiry Question: Why was this photo taken? Children look at the iconic photo of Rosa Parks sitting on a bus in Montgomery taken on December 21, 1956 and discuss what they know about the photo.</p> <p>Conjectured Responses</p> <ul style="list-style-type: none"> • Some children may have seen the photo before and believe it was taken on the day of the event. • Some children may know the details of the Montgomery Bus Boycott. • Some children may not have seen the photo or heard of the event before. <p>Children examine the photo using the mnemonic ICE ACT for details of what might be happening in the photo and record these on an ICE ACT writing frame. Children read an account from Rosa Parks' autobiography of the day she refused to give up her seat one Thursday afternoon in December 1955. Children compare the photo to the account noting differences.</p> <ol style="list-style-type: none"> 1) What things are the same in both pieces of evidence? 2) What things are different? 3) Which source do you think is more accurate? Give reasons <p>Conjectured Responses:</p> <ul style="list-style-type: none"> • Most students will use ICE ACT to read the sources • Most of the students will agree that both take place on a bus and both involve Rosa Parks. • Most students will agree that the bus is almost empty in the photo but full in the account. • A few students will agree that the photo is most accurate because it was taken at the time of the event • Most students will agree that the written account is most accurate because Rosa Parks wrote it herself. • A few students may read the source details and notice that the date of the photo is just over a year after the event took place. • A few students may note that the photo was staged. • Some students may require additional support in using ICE ACT 	<p>Linking to history through discussion: It is important to be mindful that, while sometimes the photographer may simply be in the right place at the right time, more often than not, photographs were (and still are) taken with a certain purpose in mind. It is the photographer, after all, who determines the angle, the framing, the inclusion or indeed, the omission of details in the final image</p>

Lesson 4: Sustain your claim!

<p>Learning goals</p> <ul style="list-style-type: none"> To explore the components of a historical argument To support historical claims with evidence To explore the importance of historical questions in the selection of evidence 	
<p>Starting points</p> <ul style="list-style-type: none"> The children in the pre-test came to very solid conclusions on whether the death of King Rufus was an accident or murder however there was no use made of the sources to reach those conclusions and differences of opinion were settled based on whose voice was loudest and who was most persistent. These series of activities aim to introduce the idea of historical argumentation backed up by evidence 	
<p>Activity 1: What is an argument? Teacher asks the children:</p> <ul style="list-style-type: none"> What is an argument? If I just keep contradicting what you say, is that an argument? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> Most students will say an argument is a fight between two or more people Some students will say an argument is “talk fighting” Some students may say that an argument is a disagreement that uses points to prove one person is right Some students will agree that contradiction is an argument Some students may say that shouting is an argument. 	<p>Linking to history through discussion: History is an argument about interpretations of past events. These events cannot be examined without interpretation, and historians often reach different and conflicting conclusions. Historical arguments are claims that are back by evidence.</p>
<p>Activity 2: The Argument Clinic Children look at a section of the Monty Python sketch “The Argument Clinic (from 1:17 to 3:47). Children are asked to watch again for the character’s definition of an argument. Children discuss the argument in the sketch.</p> <ul style="list-style-type: none"> What is a contradiction? Is it an argument if I keep saying “no, it isn’t”? What do you think “An argument is a connected series of statements intended to establish a proposition” means? <p>Conjectured Responses:</p> <ul style="list-style-type: none"> Most students will see that just repeating “no it isn’t” is not enough to win an argument. Some students can explain “An argument is a connected series of statements intended to establish a proposition” 	
<p>Activity 3: How do we know the world is round? The teacher introduces vocabulary of argumentation (therefore, in conclusion, however, as a result) for children to use with their arguments. The teacher poses the above question to the children and asks them to come up with some statements or claims that prove the world is round.</p> <p>Conjectured responses:</p> <ul style="list-style-type: none"> Some children will use satellite images as proof the world is round Some children will use Columbus’ voyage as proof that the world is round Some children will use traveling around the world as proof the earth is round Some children may use their experience of air travel as proof the earth is round <p>The teacher uses this example to explain how the claim the earth is round is backed up by the statements they have given.</p>	

<p>Activity 4: The Greatest Class of All The teacher gives the children a card with the claim “Our class is the greatest” along with a series of smaller cards. Some of these are written to be evidence to support the claim and some of the statements do not belong. The children determine which cards are the evidence and which cards do not support the claim. There are also a few blank cards for children to write their own evidence to support the claim.</p> <p>Conjectured responses:</p> <ul style="list-style-type: none"> • Most children will sort the cards according to whether they support the claim • Most children will be able to explain that positive statements support the claim that they are the greatest class of all 	
<p>Activity 5: Why did Titanic sink? Enquiry Question: Why did Titanic sink? The children are given a card sort to answer the question Why did the Titanic sink? They work on groups of four to arrange the cards in order of importance (in terms of answering the question asked). The children discuss among themselves why the cards are placed in a specific order.</p> <p>Conjectured responses: Students arrange the cards in order of significance to answer the question</p> <p>Conjectured responses: Students create an argument to explain why Titanic sank Students explain that historical arguments are based on evidence.</p>	

Appendix M: In-cycle analysis of HLT1 3

HLT3					
HLT			ALT		
No.	Task	Conjecture	Transcript	Clarification	Result
Nature of History					
1a One Way or Another	Are two accounts of the same event possible?	At least half of the students will recognise there are two sides to a story	Brad: yeah, I mean no we can't have two that are different. Jay: well they could have two different people who saw two different things maybe, so yes there can be Danka: you could have two journalists one on that side of the parade and one on the other, so they have different perspectives, one might be at the gymnastics one say and one might be at the magic show part say, they would have two different perspectives so one might say no there was only magic there and the other guy would say no there was only gymnastics because they didn't know what was on the other side.	10 out of 18 agree with Brad Some children think on the question more deeply and provide examples of how this might happen. This influences the others	+
1b One Way or Another	Can there be two versions of the same historical event?	Most students will consider that there is only one version of a historical event	Brad: Nah, history is history, it doesn't change so you just have what happened you know? Danka: Yes you can't just say that something different happened when it didn't, how could you read about it then? You couldn't have books on history that change unless they are Harry Potter books (laughs) Allie: Like if my brother robbed my sweets, he robbed them, you can't turn around and say he didn't cos he did – and he does that. He says he doesn't but he's lying Rónan: But I'm not sure, maybe? Not that it changes but you could have different versions? Like 1916? Or World War 2, like if you were a Hitler supporter	Children are drawing on their own everyday experiences of the immediate past but asking them to relate it to history gets some of them thinking. Encourages other children to think	+
1c One Way or Another	Can stories change over time?	Most children agree that stories cannot change over time	T: Ok, I want you to think about this question, can stories change over time? Hands up who says yes stories can change? Sarah: the past can't change so the story can't really change Brad: It can change Cathal: yeah like if you find new evidence then that will change the story Sarah: well yeah I suppose	(5 hands) Children who disagreed that history can change (B&C) have now thought about the question and are beginning to change their minds	+

1d One Way or Another	Can memories change over time?	Most children agree that memories cannot change over time	Enda: no because you will remember it it's your memory T: is there anybody who disagrees with Enda and say it yes your memories can change? Brad: your memories can change I think Rónan: yes say somebody told you a joke and you didn't get it until later on, then it went from being something stupid to something funny Ivan: that is what it is like basically the account of the story could change but the actual story wasn't changed, how you retell it	10 agree with Enda Again, discussion and sharing of ideas (Stepans) allows them to think differently – is questioning them on their ideas a key way to shift their ideas about history? Maybe this is all that is needed?	+
1e Where's the chair?	Teacher reads a list of words but not 'chair' Students write list of what they recall.	Students can explain why the list was mis-remembered	Ronan: the point of the game is, I think, do you remember when we talked about memories a few minutes ago? sometimes how we remember things isn't exactly how it happened, maybe memories can change a little bit, especially if time has passed. Danka: yes, but you didn't call a chair, so the story didn't change, just our interpretation of it changed	Most children were genuinely confused that the word 'chair' wasn't called – cognitive disequilibrium	+
1f Where's the chair?	How does that game relate to studying history?	Students relate this to the study of history	Danka: well it's important that when we are looking at history we need to check when it was created T: why do you think that is? Brad: so your memory is fresh, Brad: so when you're doing history you need to remember to look for when a, a Source? Is it? was made or when a piece of evidence was made. Callum: yes like one name could sound like another, and someone could write it down that could happen Me: Can you think of any type of history that you do in school where this could happen? Rónan: Myths and legends are good at that Danka: because memories can change, and overtime we can re... remember different things so we need to check dates T: Why? Danka: Cos if it was someone's memory from years ago and they were only talking about it now, the memory might have changed. Like ours did in a few seconds. T: So what does that mean for historical evidence? Danka: The closer the date is maybe the better the evidence is?	Children actually drew more from this conversation than I had anticipated! Perhaps linked to comment above!	+
1g The Fight	Students are principal trying to work out who started a fight. Different	Students recognise there are multiple viewpoints of an event	Dimitri: I can't think of what the word is, but you know when you see something your way and someone else can see it some other way T: perspectives is that the word you are looking for? Dimitri: yes different perspectives		+

	accounts but no-one is lying		Caoimhe: different people see different things and hear different things so they'll believe that, I don't know I just think that people, say someone was there (pointing) they saw different things or maybe they didn't		
1h The Fight	Students discuss why there may be different views and how the principal will make a decision	Students identify how multiple accounts are formed	T: ok so what might be the problem with Callum's evidence? Brad: he didn't see the fight he was in the toilet and he missed the start. T: what's the problem with the teacher's evidence Sarah: he was angry with other children T: and what's the problem with Lucy's evidence Caol: she's the best friend, she might be sticking up for her friend she might and actually tell lies T: so if I was the Principal, investigating this story what do I need to take into account Danka: where they were when it started, what they saw how they're connected	Having children act use drama to investigate the fight (using scenarios) worked very well.	+
1i The Fight	Students are asked to connect this to the study of history	Most students equate historical analysis to detective work	Caol: You have to find evidence Rónan: Witnesses can be evidence but you have to look at the relationship, you have to check what has already happened. Like with the fight, the principal should check if they've been in fights before. Brad: Yeah the perspectives Andy: Not all things that are written down are true. T: Even in school books? Danka: I think there can be mistakes. There can be two sides to a story in history, you need to check the evidence properly, not just by reading it or looking, you have to... em be a historian		+
1j Do you see what I see?	Students look at a selection of optical illusions and discuss what they see	Students explain that differences are because of differing perspectives	Rónan: that people have different viewpoints T: did we all notice the same thing first All: no T: why did we see things differently Enda: we all saw differently, it's kind of hard to explain it Conor: perspectives T: what does that word mean Danka: when you see a thing from one side it looks differently like the bunny and the Duck, Rónan: That people see things differently, can read things differently Dimitri: Other people can look at the evidence with a different perspective	Non historical activities work really well to access children's conceptual ideas	+
1k Darla	Students watch clip from Finding Nemo when Darla enters the dentist's office. Students retell the event from	Students recall event from Darla's perspective	Brad: yes, if you look there she is so happy Danka: and she's not banging the glass she's tipping it T: true when we look at it does it look like she's really banging it? All: no Rónan: we are seeing it from Nemo's perspective so it looks like she is pounding the aquarium but she's actually only tipping it and singing Twinkle Twinkle Little Star Caoimhe: and she's not being nasty there she's just saying I'm a piranha because she loves fishes		+

	Darla's perspective		Brad: and look she is all excited about getting her fish All: yeah Brad: and now she sees that the fish, her birthday present, is dead Caoimhe: look at her little eyes they just break, she's not getting a birthday present at all and she loves fishes T: ok let's look at that again in slow motion, look at her face Sarah: AHHHHH		
1l Darla	Students are asked to connect this to the study of history	Students explain that there are many ways to interpret the same event	Rónan: Em, how you look at what happened in the past? One person sees it one way and another sees it another way? Brad: Evidence, like you can read it one way and someone else reads it another way Enda: I'm not sure, maybe something to do with conspiracy theories? Like Roswell or UFOs in general? T: Explain Enda: Well, isn't that how they might happen? Like you saw a, I don't know, a new aircraft in the sky and someone else thought it was a UFO, or maybe you actually saw the UFO and thought it was an aircraft! Danka: It's about perspectives again. T: How? Danka: Well, it also about how you can change what you think, I thought Darla was mean and spoiled, like my sister, but then I saw she's just a little girl who loves fishes. I looked at it differently		+
1m The Fighting Vikings	Students read contrasting accounts of the Vikings and asked to explain the differences	Students explain differing accounts	Danka: I know why there are two different perspectives. The monk says bad things about them because the Vikings only acted bad towards the monks but the Persian Guy he goes over to them and there is no rivalry between them and the Vikings probably want to do business with him he doesn't know that they attacked the monasteries. The monks do so they think the Vikings are always bad. But they might not be always bad Brad: So there we have two different accounts, is it? of the same people Rónan: A bit like the optical illusions they are both Good and Evil		+
1n The Fighting Vikings	Students are asked to connect this to the study of history	Students refer to the importance of 'sources' (may not use this word) (may not use this word)	T: Yes, Rónan, exactly, when we read these two accounts what is the first thing we need to do when we are being historians? Rónan: Is to look at who created it, the Arab Trader works with the Vikings the Irish monk, his country was invaded by the Vikings, he's not going to like them anyway, So, before we even read these sources, as historians we should be thinking in our heads, a bit like the lunchtime fight, we need to look at who has written it when they've written it what they're saying. Brad: we learnt that there can be different ways of looking at History and we learnt that it's because we all see things differently but that doesn't mean that anybody is lying	All children engaged well with this activity	+
Significance					
2a Snapshot in Time	Children write an account of	Students note that accounts	Danka: I didn't. I had too much to put in and it wasn't as important as the other stuff I put in Sarah: That was in the past but sorry Miss, I don't think that is going to make it into the history books	The modifications to this activity were successful in introducing the idea of	+

	what happened at break time	differ due to significance	T: anyone know why? Caoimhe: Because it's not that interesting T: It is to me! Enda: Sorry Miss but it's just not significant	significance to the children	
2b Big Fish Little Fish	Children discuss the word 'significance'	Students identify significant moments in their lives	Danka: The day my sister was born, my world changed Caoimhe: My communion, loved that day Brad: When I went to Lanzarote for Christmas, it was deadly Enda: The day I got my lizard, oh that hasn't happened yet but it will Sarah: The day the twins were born (her sister was in the 2nd cycle and named this event too)		+
2c Big Fish Little Fish	Teacher models an approach to significance using a rating scale. Students rate a series of eight events	Students choose the correct rating for each event	T: 1916 – national T: O'Casey – local Rónan: Moon – global – it was Neil Armstrong Ivan: he wasn't the first in space though Yuri Gavingarin was T: That's right Ivan: He's more significant to me cos he's Russian. T: birth of grandad individual T: Women getting the vote: global Danka: It might not be because in some countries woman cannot vote T: Thank you for that Danka T: Invention of gunpowder – global Caoimhe: What's gunpowder? T: What they put into guns to make them fire T: The day I had a tuna salad – global (laughing) Ronan: Individual Class: Not at all significant	Rating scale worked well.	+
2d World's Greatest	Students are asked to generate a list of the top ten most significant people in history	Children use the rating scale (independent of teacher) to select and justify personalities	Roxanne: I think Queen Elizabeth is important Enda: No, I don't think so, what has she done, she sits in her palace all day. Nothing to change the world. What about the Mens' Shed? They haven't changed the world but they've changed our place and made it look nicer. Conor: Yes, right cross Plunkett out Ivan: Donald Trump, actually, he's not important. Bill Gates because of Mircrosoft and Yuri Gagarin cos he was the first person in outer space, the real first person, and I suppose Neil Armstrong cos he was the first person on the moon. Conor: Michael Collins, my uncle Noel has stones from off his grave. He's in the same army of Collins, not with Collins, Collins is dead. Isn't he? Enda: Why Michael Collins? He sold our country out. He signed the Treaty and we and we lost half the country over him, go with DeValera Conor: But Collins fought in 1916 Enda: So did DeValera Conor: Oh, I don't care really	Very interesting and heated discussions during this activity. Particular reference made again to 1916 leaders. Interesting how quickly Conor dismissed Joseph Mary Plunkett for the Men's Shed – capitulated immediately	+

			<p>Enda: You should care</p> <p>Ivan: Right then, James Connolly</p> <p>Conor: Right, then DeValera then Pearse then Collins</p>		
2e Ireland's Greatest	Students are asked to connect this to the study of history	Students relate significance to the selection of events in history	<p>Rónan: Em, well, if what we think is significant isn't significant to someone else then how do you know?</p> <p>T: How do you know what?</p> <p>Rónan: Em, I'm not really sure, how do you know what you're learning is actually significant?</p> <p>Danka: Yes, how do you know if what you are learning is the real story?</p> <p>Enda: Well if it's the real story it's what we are learning, the government knows.</p> <p>Brad: But how do you KNOW it's the real story?</p>	Some relativist thinking happening here!	+
Images as evidence					
3a Look Twice	Can the camera lie?	A photograph gives an accurate account of what happened (unless the image has been edited)	<p>T: Can the camera lie?</p> <p>Caoimhe: I think yes because you can edit things like on your phone</p> <p>Roxanne: Yes, I do too because sometimes you can see pictures where people look like best friends but in real life they are not</p> <p>Rónan: There can be green screens</p> <p>T: There can be</p> <p>Brad: People can hack it and edit it and change the footage, so let's say people were enemies and the camera hacked it and made them look not nice</p> <p>T: By changing it</p> <p>Dimitri: Yes, you can put an image on your phone and do what you like</p> <p>Caitlyn: Yes, cos on youtube you can make fake stuff and you know its fake and you can put filters on snapchat and they aren't real</p> <p>T: Let's suppose the photograph has not been hacked, green screened or edited in any way, now think, can the camera lie?</p> <p>Caol: No, if it's a CCTV camera they can't edit it, it only sees what it sees it doesn't change, what it sees is what happened</p> <p>Enda: Yes the camera can lie, say if you wanted a robbery break in, you could put a ski mask on your face with</p> <p>T: Ok, I think you are talking more about a robbery than an image, are you?</p> <p>Conor: Eh yeah</p> <p>T: Let's say I took a photo right now, of you guys</p> <p>Caitlyn: When you take a photo it's like a memory of where you were and what you were doing at the time</p> <p>Ronan: well a real photo is like a mirror, it flips the world Like you can't read writing in a photo it's backwards sso it's not real reality is it?</p> <p>Caoimhe: I think it is, like if I take a photo at my birthday party, it shows what happened at that minute, even if it's flipped</p>	<p>Can camera lie No</p> <p>(10) Yes (5)</p> <p>Class 12 (no) 3(yes)</p>	+
3b Look Twice	Students examine a	Students explain how the 'look	Dimitri: The closer it is the bigger we see it, the tower is far away and plus the man with the camera is on the ground. We have to look at all the positions		+

	series of photographs designed to make the viewer look twice	twice' photographs were created	Ivan: How do you know it's a man? Dimitri: I don't Caitlyn: She's standing away from it really, if I was watching it being taken she would be hugging the air, she's hiding her arm T: ok this one Brad: a mirror pointed down at the grass, it's creepy Enda: That's cool the giraffe is eating the plane Rónan: It's a prop T: No, no props Brad: The plane is far away, you have to get the right time for that Dimitri: The girafee was just standing there and the plane was passing		
3c Look Twice	Students examine a series of photographs designed to make the viewer look twice	Students understand that photographs sometimes do not tell the whole story	Brad: It's all about timing Rónan: And standing in the right position Caoimhe: The background has to be right Dimitri: Perspective Ivan: Like I said earlier, we don't see the full photograph Danka: Yes Ivan, It could be at the wrong place at the wrong time, like something that looks like something else? Brad: You can see what the past looks like, what happened then but it's not the full picture, you have to think about the WAY they took the picture, what THEY want you to think Enda: Like the King Rufus picture, it was drawn ages later, maybe that artist wanted us to think Tyrell killed the King and drew it that way but actually, no one knows who killed him. But he wasn't there Rónan: The photo doesn't tell you everything, you should think about the background, what you can't see Brad: You can see what the past looks like, what happened then but it's not the full picture, you have to think about the WAY they took the picture, what THEY want you to think	Many examples of high level thinking evident throughout this activity. Important to give students the opportunity to reflect on and discuss	+
3d Listen and Draw	Students listen to eye witness account.	Students note how their images are different	T: Were any illustrations the same? No T: None were identical? No T: Let's see what they have in common. How many of you drew the GPO? How many drew the tricolour? 3, Gunshots? 1, Metropole Hotel? 1, Inside GPO? Outside GPO? T: Now you all heard the same account yet all your illustrations were different, why?	7 drew GPO	+
3e Listen and Draw	They sketch the scene and look at each others' sketches and discuss why these are different	Students account for differences in the sketches	Caoimhe: Different imaginations Caitlyn: Diff people Roxanna: We remembered different things that were said Rónan: Different people imagined different things and are interested in different things Brad: They are different because they are from your own perspective Caoimhe: We weren't there, we were using our imaginations Caol: If I had a time machine that's where I'd go back to		+

3f Listen and Draw	Students are asked to connect this to the study of history	Students connect activities on images to studying history	Enda: You weren't there Brad: No, some photographs are taken when someone is there Look Twice Brad: You can see what the past looks like, what happened then but it's not the full picture, you have to think about the WAY they took the picture, what THEY want you to think Caoimhe: Sometimes images are made years later and the people weren't there so they are using their imaginations. You need to check	Refer back to Lee & Shemilt – the past is unknowable because you weren't there – is Callum shifting to another level is thinking?	+ -
3g Shall I compare thee	Students look at two paintings of the same event. One created by an eyewitness, the other created later	Students recognise the importance of the checking the date of a source	Caoimhe: We learned that some people weren't there and they painted it using their imagination. You have to look at dates, like if someone made it in 1916 then you'd know that they were probably there. But if they made it last year then you'd know that they weren't there.		+
3h The Sourcerer's Apprentice	Students are introduced to a sourcing heuristic ICEACT to explore historical images	Students can explain each step of ICEACT	T: It comes from the word context – it means what was happening at the time, what was happening at that time. Does anybody know what was happening in the world when the 1916 Rising took place? Enda: The war. T: Yes, and it's important that we know that. Can anyone tell why? Brad: Cos it was a good time to pick a fight, when England was fighting in the war T: Yes, as historians we have to remember to contextualise T: then we explore and analyse the image or text, you dig a little deeper. T: Then we have another C, it's compare – so I look for other sources to back it up. So if I was reading an eyewitness account that said James Connolly was shot in the ankle, I could then cross check that with another account or maybe a photograph or news article to see if the other sources back it up. I use a longer word for that Brad: What is it? T: Corroboration – it means to compare Brad: Well I'm going to use that		+
3i The Woman on the Bus	Students are given an image of Rosa Parks sitting on a bus to explore	Students use ICEACT to explore a photo	Caol: Identify, Caoimhe: Dec 21st 1956, International Press Caitlyn: There's a man on the bus Caoimhe: Right so one is white and one is black, do you think that's the girl who, remember, they told her to get up and she said no Caol: Something Rose, Rosy Parker, Rosy Parks Caoimhe: Rosa Parks Caol: Yeah something like that Caoimhe: Yeh I think that's her Caitlyn: Teacher, teacher, you know the girl that said she'd stand up for ... Caol: Is that her there?	Like in second cycle, children draw on historical knowledge from outside the classroom. They haven't studied Rosa Parks or the Civil Rights Movement Interesting use of 'different coloured' by	+

		<p>Caoimhe: Yeah it looks like her, Miss, is that Rosa Parks? I bet ya that man, that white fella, I bet ya, I bet that she's at the front and then a white person walks in, and the bus driver was like 'you have to get into the back' and she's like 'what? Why?'</p> <p>Caitlyn: Yeah so she was standing up for herself</p> <p>Caoimhe: Right so this is Rosa Parks and she's on a bus, we need to contextual – what was happening.</p> <p>Caitlyn: Contextualise. Right Rosa Parks, she's different coloured and</p> <p>Caol: Why would she have to stand up, the thing is there's loads of other seats</p> <p>Caoimhe: Yeah but you'd still have to get up, like for him (pointing to man)</p> <p>Caoimhe: So contextual, what was happening, that was the time where white people were, like black people were, black people were starting to stand up for themselves</p> <p>Caitlyn: Miss we spotted something,</p> <p>Caol: No I spotted it, look it up on youtube</p> <p>T: Did you identify?</p> <p>Caoimhe: Yes, we did, what's United Press?</p> <p>T: It's a newspaper</p> <p>Caoimhe: Ok, thanks, and that's Rosa Parks</p> <p>T: What do you know about Rosa Parks</p> <p>Caol: She was a black woman,</p> <p>Caoimhe She was different coloured and she sat on a seat and when a white person came along, the blacks had to give them the seat but Rosa Parks didn't and when the bus driver came along and she got emm, what do you call it? ..emm... crucified.</p> <p>Caol: Not crucified, arrested</p> <p>Caoimhe: Yes, arrested but then they killed her.</p> <p>Caol: They didn't kill her</p> <p>Ellen: No they didn't</p> <p>Caol: No she died in like em 2002 or something.</p> <p>T: So is that the context?</p> <p>Ellen: Yeah, black people were not being treated fair and she stood up to it</p> <p>Caoimhe: So now you explore, what's happening? Basically, I think he feels disgusted because..</p> <p>Caol: I'd call this 'The Racist Picture' racism</p> <p>Caoimhe: Even the way he's turning away from her</p> <p>Caol: We don't know for sure if it even is Rosa Parks, it might be just some black woman sitting on a bus</p> <p>Caoimhe: What do you think she's feeling?</p> <p>Caol: I think she's feeling not treated equally</p> <p>Ellen: Ok then, what is it actually showing us, two people on a bus,</p> <p>Caoimhe: I don't think it was taken the day she stood up, I think it was taken after she'd been arrested.</p> <p>Ellen: Yeah, see if only the bus was full, and it's not full</p>	<p>Eliie and is picked up by Caoimhe</p>	
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			<p>T: Ok, so most of you have identified the woman as Rosa Parks, now most of you used the first part of ICEACT well</p> <p>Brad: We had to stop at corroborate</p> <p>T: Yes because you need something else to corroborate it with. I'm going to give you another document to allow you to do that. Use ICEACT on this as well.</p>		
3j The Woman on the Bus	Students Read account of the day she refused to stand up.	Students use ICEACT to explore a text based account	<p>Caitlyn: Ok, this is an autobiography, I'll read it</p> <p>Danka: You aren't doing what we're supposed to do, who wrote this</p> <p>Sarah: Rosa Parks</p> <p>Caitlyn: She rode the bus home, told you</p> <p>Danka: it's her story, she wrote this about the day she didn't give up her seat.</p> <p>Sarah: The final straw came... told you she was on her way home. I learned that she was being tired of being treated ... mistreated by the Whites. I think that she thought to stand up for herself and make her be part of the squad and made herself be happy.</p> <p>T: did you identify</p> <p>Sarah: December 21st 1956, that's the details</p> <p>Danka: The photo says that the story doesn't, teacher gave us a fake photo</p> <p>Sarah: That's a year after the story. Let's read the story again and see what's wrong, why are the dates different</p> <p>Danka: Why would they take a picture of her? Sitting on the bus</p> <p>Dimitri: And there's not a lot of people and there's no people standing</p> <p>Sarah: Yes, there were, there were four people standing, see it says it</p> <p>Caitlyn: It's fake, it was made a year after it happened</p>	All groups spotted the discrepancy	+
3k The Woman on the Bus	Students are asked to discuss both pieces of evidence	Students explain discrepancies in two accounts	<p>Sarah: Ok it happened December 21st 1955 and exactly a year later she got the picture so it must be just for view, like for the newspaper</p> <p>Danka: Maybe because it got popular then, they were writing a story</p> <p>Enda: United Press International, it was taken for the newspaper</p> <p>Brad: Because she made people not give up their seats, they are celebrating it, there was no photographer there so they staged it for the newspaper story.</p>		+
3l The Woman on the Bus	Students are asked to connect sourcing to the study of history	Students identify reasons why sourcing an image or a document is important to the study of history	<p>Danka: In history sometimes the photo doesn't tell the full story. Or sometimes it's made later to go with a story but it's not from the time. That's why you check the dates and the source. You corroborate</p> <p>Sophie: Not all photos are fake you look at the evidence as well.</p> <p>Ivan: don't judge a book by its cover –most people think that man was a racist, I did, but when you really look you might find another story</p>		
Sustain your claim					
4a What is an argument?	Students are asked to define an argument	Students describe arguing as a fight	<p>Caitlyn: An argument is when two people disagree about something and they start shouting at each other.</p>	So does the loudest voice usually win the argument?	+

		between two people	Danka: When two people think, well person A thinks something is right and person B thinks something else and they fight about it.	Class have mixed views (11 say yes)	
4b The Argument Clinic	Students watch the Monty Python clip and listen for a definition of an argument	Students explain the difference between contradiction and an argument	Brad: Contradiction is just repeating no it's not Rónan: an argument is a connected series of statements intended to establish a proposition. Danka: I know what that means. Proving your point. When you argue you have to have evidence to back up what you are saying. I would love a job to argue. Brad: An argument is when you disagree with someone but it's not contradiction. Some people thinks its fighting Danka: It's proving yourself right with evidence Enda: Not contradiction, like saying the one thing over and over again		+
4c How do we know the world is round?	Teacher gives students the statement and asks them to work in groups to prove the world is round	Students identify a series of statements to back their claim	Rónan: If the earth was a square then there would be less gravity at the vertices T: At the vertices? Rónan: Yes, there would be way less gravity T: Ok, that's persuasive Rónan: And Christopher Columbus, he circumnavigated T: But he didn't Rónan: Yes, he did T: No, he didn't Rónan: Miss, you aren't arguing, you are just contradicting me T: No I'm not (Rónan laughs) he went as far as America and then he stopped Brad Well then how did he get to China? T: He didn't get to China Danka: Yes, he thought the native americans were Indians, that's how much Christopher Columbus knows Rónan: If the world wasn't round, you would come to the edge, you can just walk around, where's the edge? Rónan: There are pictures of the round earth Ellen: Astronauts took photos, NASA have satellites and the moon is round Eimear: I've never heard of anyone falling off, astronauts have proved it with pictures, T: Well done all of you, so, you answered my argument with your own claim and then you backed it up with evidence. You made your claim stronger.	The sequence for this activity and The Greatest Class was shifted to allow students the opportunity to generate and back up claims	+
4d The Greatest Class of All	Students use a card sort to back the claim.	Students sort the cards according to whether they support the claim or not	Caoimhe: Claim, our class is the greatest, what cards prove it? We are kind Ellen: We work as a team, we show respect Caoimhe: The principal and the homework, no, not proving Ellen: These ones don't back it and these ones do Caol: We show respect, yes, that backs it up	One group began to sort using true and false as categories. This was spotted quickly	+

4e Why did Titanic sink?	Students work in groups to arrange a card sort to answer the question.	Students use evidence to construct an argument	<p>Danka: We decided that all of these are important Dimitri: and that these are unnecessary, not significant T: Ok now build your argument, do any connect? Dimitri: Yes, he was told not to go fast so he ignored the Danka: These are connected to the design so as a result Titanic sank. You can link these, the building, the design, Ok, design or going too fast, which one? The design had lots of things wrong Caitlyn: Too fast. I think I'd go for way too fast. Dimitri: Going too fast Danka: Ok, I am going to practice design and too fast Caitlyn: Ok, but people believed.... They had one perspective Caoimhe: Remember the video, we've to build the argument, we need to sort them. Like it was unbreakable. Sarah: Yeah we've just been reading over the cards not sorting them or talking about them Conor: Maybe they thought it was a party, it's a perspective, maybe they said 'hey look at Titanic they are having a great time!' Rónan: Well there should be special coloured flares to show that they aren't Conor: Yes but... Rónan: The question is why did Titanic sink but there's an even bigger question, why didn't people survive? Ok back to the question</p>	Only two groups constructed viable arguments. The other groups had very interesting discussions but didn't construct an argument – time constraints	+ -
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Appendix N: Overview of conjectures achieved

(those not achieved are marked in grey)

HLT Cycle 1																							
1a	1b	1c	1d	1e	2a	2b	2c	2d	2e	2f	2g	3a	3b	3c	3d	3e	4a	4b	4c	4d	4e	4f	4g
-	+	⁺ ₋	+	+	+	-	-	-	+	-	⁺ ₋	+	+	+	⁺ ₋	-	+	+	-	+	+	-	⁺ ₋
TF	TF	TF	TF V	TF V	AB	AB	AB	AB	T W G	T W G	T W G	TS A	TS A	W OT B	W OT B	W OT B	AC	AC	GC O A	T WI R	TT	TT	TT

HLT Cycle 2																																
1a	1b	1c	1d	1e	1f	1g	1h	1i	2a	2b	2c	2d	2e	3a	3b	3c	3d	3e	3f	3g	3h	3i	3j	3k	3l	4a	4b	4c	4d	4e	4f	4g
-	+	+	+	+	+	+	+	+	+	+	+	+	⁺ ₋	+	+	+	+	+	+	+	+	+	⁺ ₋	+	+	+	+	+	+	+	-	+
O W OA	O W OA	W TC	TF	TF	TF	DY S WI S	TF V	TF V	BF LF	BF LF	IG	IG	IG	LT	LT	LT	LA D	LA D	LA D	SIC T	TS A	W OT B	W OT B	W OT B	W OT B	WI AA	TA C	T WI R	TG CO A	W DT T	W DT T	W DT T

HLT Cycle 3																																				
1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	2a	2b	2c	2d	2e	3a	3b	3c	3d	3e	3f	3g	3h	3i	3j	3k	3l	4a	4b	4c	4d	4e	
+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	⁺ ₋	+	+	+	+	+	+	+	+	+	+	+	+	⁺ ₋
O W OA	O W OA	O W OA	O W OA	W TC	W TC	TF	TF	TF	DY S WI S	D	D	TF V	TF V	SIT	BF LF	BF LF	W G	IG	LT	LT	LT	LA D	LA D	LA D	SIC T	TS A	T W OT B	T W OT B	T W OT B	T W OT B	WI AA	TA C	T WI R	TG C	TT	

Do You See what I See?





The Fighting Vikings

Ibn Rustah was a 10th-century explorer born in Persia. He wrote about when he met the Rus people on his travels (Vikings)

"They carry clean clothes and the men adorn themselves with bracelets and gold. They treat their slaves well and also they carry exquisite clothes, because they put great effort in trade. They have many towns. They have a most friendly attitude towards foreigners and strangers who seek refuge."

The St. Gall manuscript is a holy book hand written by monks in the 10th century. It has a short poem written by an Irish monk

Sharp the Wind (English Translation)

The sea is stormy tonight, it tosses the white hair of the ocean: I fear not the crossing of the clear sea by the fierce warriors from Lothlainn (Vikings).

Big Fish Little Fish

Scale of significance

Who would judge it significant?

Global	Everyone in the world should know about it
National	Everyone in the country where it occurred should know about it
Local	Everyone in the region or who belongs to a specific group(s) should study it
Individual	Only the descendants and family of the people involved need know about it
Not at all significant	No one needs to remember it

How significant are these events and people?

1. The 1916 Rising
2. The building of the Sean O'Casey Centre
3. The first person to go into outer space
4. The person who invented the computer
5. The birth of my grandfather
6. Women receiving the right to vote in national elections for the first time
7. The invention of gunpowder
8. The day I ate tuna salad for lunch

Ireland's Greatest

Look Twice



Shall I compare thee?



The Arrest

by Kathleen Fox
(1916)

Kathleen Fox, an artist, witnessed the famous arrest of Countess Markievicz, as she was walking by St. Stephen's Green during Easter Week, 1916.

She sketched the scene in pencil on the spot and then transferred the sketches onto the large canvas in her studio.

Kathleen completed the work in secret and dated the painting 1916.

Soon after, she sent the canvas to New York, in case the British authorities confiscated the work.



Birth of The Republic

by
Walter Paget
(1918)

Walter Paget was an English artist.

He may have been commissioned to paint "The Birth of The Republic" by an Irish printer in 1918 but the details are unclear.

Paget was not in Ireland during the Easter Rising.

The Sourcerer's Apprentices



The Woman on the Bus



Dec. 21, 1956,
Source: United
Press
International

Source: Rosa Parks, My Story, published 1992

Here's a description of what happened that day from Rosa's autobiography

"The final straw came December 1st, 1955 as I rode the bus home from my job at the Montgomery Fair Department Store.

I boarded the bus, paid my fare, and sat down in the first row behind the seats reserved for the whites. This was in the eleventh row and almost in the middle of the bus. The bus made its way along its route and the seats reserved for whites only began to fill up.

When all of the seats were full, and there were still three whites standing the bus driver moved toward the back of the bus and demanded that four black people relinquish their seats to the white people. I just wanted to protect myself and my rights. The three black men near me moved, but I just scooted over towards the window seat.

The bus driver then asked me why I did not get up and move and I told him that I did not feel that I should have to.

People always say that I didn't give up my seat because I was tired, but that isn't true. I was not tired physically, or no more tired than I usually was at the end of a working day. I was not old, although some people have an image of me as being old then. I was forty-two. No, the only tired I was, was tired of giving in. I knew someone had to take the first step and I made up my mind not to move. Our mistreatment was just not right, and I was tired of it."

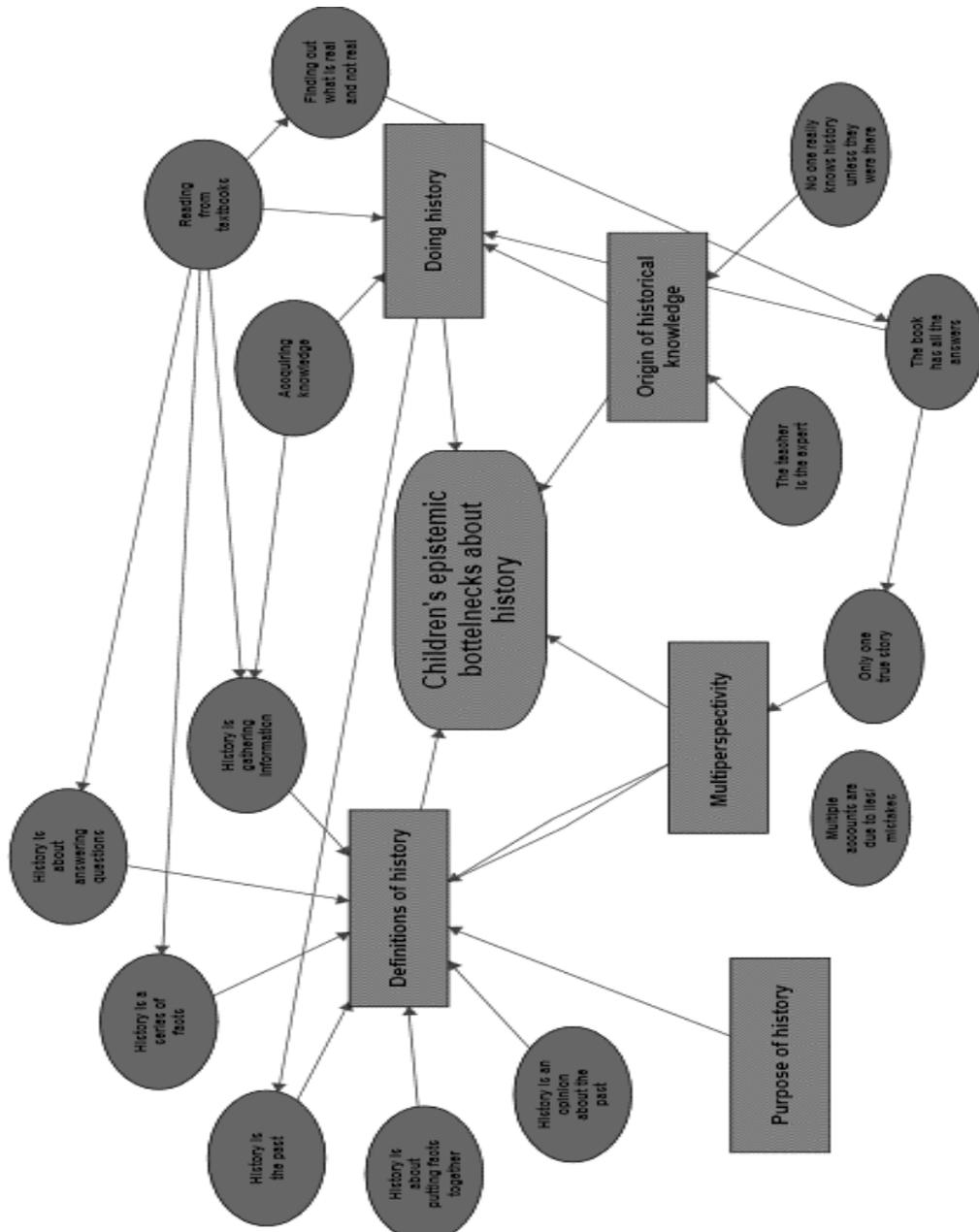
<h1>Claim</h1>	Our class is the greatest!		
<h1>Evidence</h1>			
We work together as a team.	The students in our class work hard to follow directions.	Everyone worked hard to finish their reading.	We offer to help others when they might be stuck.
We are kind to others.	We show adults and other students respect.	We didn't help our teacher clean the room at the end of the day.	We didn't listen carefully to directions.
We did not do our work when we had a guest teacher.	The principal had to ask us to be quiet in the hallway.		
Some students were running in the hallway.	Many students forgot to do their homework.		

Why did Titanic sink? Why did so many die?	
The maiden voyage of the Titanic was Captain E.J. Smith's retirement trip. Captain Smith was aged 62. All he had to do was get to New York in record time.	Captain Smith ignored seven iceberg warnings from his crew and other ships.
Captain Smith was considered to be very competent and well-liked by both the crew and the management of the White Star Line.	Captain Smith had collided with a Royal Navy cruiser when he had been captain of the Olympic.
Three million rivets held the sections of the Titanic together. Research shows that they were made of sub-standard iron.	When the Titanic hit the iceberg, the force of the impact caused the heads of the rivets to break and the sections of the Titanic to come apart.
Competition for passengers was fierce and the White Star Line wanted to show that it could make a 6 day crossing. The Titanic could not afford to slow down if it was going to achieve a 6 day crossing.	Bruce Ismay, managing director of the White Star Line, was on board the Titanic. He may have put pressure on the Captain to maintain the speed of the ship.

<p>Many people believed that the Titanic was unsinkable because it had 16 watertight compartments.</p>	<p>The Titanic's watertight compartments did not reach as high as they should have done. The White Star Line cut down on their size to increase space for 1st Class passengers.</p>
<p>If Thomas Andrews, the ship's designer, had insisted on making the watertight compartments the correct height then maybe the Titanic would not have sunk.</p>	<p>Many of the crew and officers of the Titanic had no experience of working on large cruise liners.</p>
<p>The Titanic could float if 4 compartments were flooded but when the iceberg hit 5 compartments were flooded.</p>	<p>The crew did not believe that the iceberg had caused serious damage, they believed that the ship had just scraped the iceberg</p>
<p>The Titanic hit the iceberg at 11.40 pm. The order to launch the lifeboats wasn't given until 12.30 am.</p>	<p>Many of the passengers believed the Titanic was unsinkable and refused to leave the ship.</p>
<p>The first lifeboats to be launched were sent away half full. The first boat could carry 65 people but had only 28 people on board.</p>	<p>The Titanic could carry 48 lifeboats but the White Star Line ordered that on the maiden voyage it should only carry 20. This meant that only 52% of the people on board would have a place in a lifeboat.</p>
<p>The White Star Line had provided the amount of lifeboats recommended under British law. Though legally required to carry fewer lifeboats than they did, the lifeboats that were stored on the Titanic could still only fit about half of the total number of people on board</p>	<p>The final iceberg warning was from the Californian. At 11.15 pm the radio operator on the Californian switched off his radio and went to bed.</p>
<p>Just after midnight a member of the crew of the Californian reported seeing rockets fired into the sky from a big liner. Captain Lord, captain of the Californian, took no action because he believed the Titanic was having a party and using fireworks.</p>	<p>According to a new book by Officer Charles Lightoller's granddaughter, the ship had plenty of time to miss the iceberg but the helmsman panicked and turned the wrong way. By the time the error was spotted, it was too late and the side of the ship struck the iceberg. The revelation, which comes out almost 100 years after the disaster, was kept secret until now by the family of the most senior officer to survive the disaster.</p>

Appendix P: Rubric for coding pre- and post-test activities		
Historical questions	1. Interpretative questions	Asks deeper “how” and “why” questions
	2. Factual questions	Asks surface level questions requiring surface level answers
Contextual	3. Social	Uses knowledge of socio-economic, political & cultural settings
	4. Spatial	Uses knowledge of geographical and spatial concepts
	5. Chronological	Uses knowledge of time periods and significant events
Argumentation	6. Supporting claims	Makes an argumentative claim and provides plausible reasons for it
	7. Multiple claims	Considers various claims when proposing an argument
	8. Counterclaims	Student makes a claim that introduces contradictory information or opposes an already existing claim.
Substantive Concepts	9. Use of historical concepts	Uses knowledge/understanding of substantive concepts such as monarchy, republic, reign, kingship, royalty.
Meta-concepts	10. Historical Significance	Identifies a significant historical event Uses criteria to decide on the significance of the event
	11. Continuity and change	Takes note of major and subtle changes that have occurred over time
	12. Cause and effect	Notes varying contributing influences in shaping historical events.
	13. Empathy	Appreciates how people understood their own time and how they saw themselves within it.
	14. Time and chronology	Places people and events within a broad historical sequence Uses words and conventions associated with dates and time
Using Evidence	15. Analysing or exploring evidence	Appreciate that evidence can be interpreted in a number of ways
	16. Using a source to support or refute an idea	Makes simple deductions from evidence
	17. Comparing sources	Compares accounts of a person or event from two or more sources to make sense of conflicting information
	18. Evaluating a source as evidence	Asks questions about a piece of evidence rather than the content (who wrote this, why might they write it, who is their audience, etc)
(based on van Drie & van Boxtel, 2008)		

Appendix Q: Conceptual map of epistemic beliefs



Appendix R: 'Enhancing historical reasoning' Amsterdam, Sept, 2019

CHILDREN'S EPISTEMIC BELIEFS ABOUT HISTORY
AND HOW THEY MAY BE ADDRESSED



Caitriona Ni Cassaithe
Institiúid Oideachais
DCU
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METHODOLOGY

- **Design-Based Research**
 - Teaching Experiment (Maths Ed)
- **48 primary school children aged 10 years**
 - over three cycles
- **Aims:**
 - to identify children's 'epistemic bottlenecks' about history
 - to develop a series of hypothetical learning trajectories to challenge these
 - to contribute to a local instruction theory for teaching and learning about historical evidence

RESEARCH QUESTIONS

- What epistemic bottlenecks inhibit the understanding of historical evidence?
- What approaches can support overcoming these epistemic bottlenecks?



EPISTEMIC BOTTLENECKS

- Beliefs about history can hinder historical understanding
- Beliefs often originate in children's common sense ideas of how the world works
- Beliefs influence how children 'think' about history and 'do' history and this relationship is both reciprocal and intricate



Appendix S: Student history log

My History Learning Log



Name: _____