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Learning to 'Understand Backwards' in Time: Children's Temporal Cognition and the Primary History Curriculum

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Acronyms

AD: Anno Domini, Latin term for "the year of our Lord".

CPD: Continuing and Professional Development.

DEIS: Delivering Equality in Schools.

DES: Department of Education and Science, Ireland.

DES/UK: Department of Education and Science, UK.

DfEE: Department of Education and Employment, UK.

HNC: History in the National Curriculum, UK.

ICT: Information and Communication Technologies.

ITE: Initial Teacher Education.

JFK: President John F. Kennedy.

M. Ed.: Master Degree in Education.

MIC: Mary Immaculate College, Limerick.

NC: National Curriculum, UK.

NCCA: National Council for Curriculum and Assessment.

NQT: Newly qualified teacher

PG: Postgraduate student.

PPDS: Primary Professional Development Service.

QCA: Qualification and curriculum Authority, UK.

SEC Project: Surveys of Enacted Curricula project, US.

SES: Social and Environmental Studies.

SESE: Social, Environmental and Scientific Education.

SPHE: Social, Personal and Health Education.

STEM: Science, Technology, Engineering and Mathematics subjects.

TIMSS: Third International Mathematics and Science Study.

UCC: University College, Cork.

UG: Undergraduate student.

ZDP: Zone of proximal development (Vygotsky).

Declaration:

I hereby declare that the thesis submitted is my own work and has not been submitted for another degree, either at UCC or elsewhere.

Signed: _____

Dedication

I dedicate this work to the four wonderful men in my life, who keep me young and make me old!

I am forever grateful to my husband David and my sons Cian, Robbie and Barry for their support, understanding, humour and encouragement.

Acknowledgements

Learning to 'Understand Backwards in Time': Children's Temporal Cognition and the Primary History Curriculum.

Abstract

Context:

This study examines children's temporal ways of knowing and it highlights the centrality of temporal cognition in the development of children's historical understanding. It explores how young children conceptualise time and it examines the provision for temporal cognition at the levels of the intended, enacted and received history curriculum in the Irish primary school context. Positioning temporality as a prerequisite second-order concept, the study recognises the essential role of both first-order and additional second-order concepts in historical understanding. While the former can be defined as the basic, substantive content to be taught (Lee and Ashby, 2000; Peck and Seixas, 2008), the latter refers to a number of additional key concepts that are deemed fundamental to children's capacity to make meaningful sense of history, involving the "procedures" of historical thinking (Den Heyer, 2011). In addition to time and chronology, these include using historical evidence, understanding the relationship between cause and effect, change and continuity, and developing imagination and empathy. The study argues for due recognition to be given to temporality, in the belief that both sets of knowledge, the content and skills, are required to develop historical thinking (Lévesque, 2011).

Rationale:

The focus of this study is learners, learning processes and learning opportunities. The term "temporal ways of knowing" is utilised to describe the means by which children's constructions of time in the past emerge and develop over the period of their primary schooling, involving both the cognitive-developmental and sociocultural impacts on such learning and understanding. A central component of the research is the explication of the relationship of temporal ways of knowing to historical understanding and other second-order concepts. The term 'temporal ways of knowing' is chosen over the terms 'temporal cognition' or 'understanding historical time' as it encompasses an understanding and framing of the cognitive perspective on learning within a sociocultural perspective on learning and learner diversity. Thus, a sociocultural lens is brought to bear on the study, balancing the predominant cognitive-developmental view in the literature. The phrase also implies an emphasis on the processes of learning. My position in the study is one of situated cognition, and a nuanced, fine-grain distinction between the two perspectives.

Literature:

The review of literature undertaken in the study begins with an outline of the metaphorical nature of time that holds such meaning in our daily lives. It asserts that children's emerging understanding of time is a highly complex, developmental process, influenced by a broad range of cognitive-developmental and sociocultural factors. It confirms that children of primary school age are capable of embracing a diverse range of aspects of temporal cognition, given a supportive learning environment. It determines the place of temporal cognition as a prerequisite second-order concept in the development of historical

understanding. It charts developments in temporal understanding and history education, especially over the past 4 decades, and it traces implications for curriculum and pedagogy.

Drawing these literature areas together is important: temporal ways of knowing legitimises children's different experiences more directly in the conversation about understanding historical time, while attending to the need to outline common curricular goals and key milestones in that understanding. This discussion contributes to a reframing of how children's historical understanding can be understood and facilitated. The work identifies and challenges the under-elaborated framing of temporality in current curriculum documents, and offers a more expansive view, giving due recognition to a comprehensive range of both cognitive-developmental and sociocultural influences on children's temporal ways of knowing. For the purposes of this study, I am focussing on an appraisal of the history component of the primary school curriculum and its contribution to temporal ways of knowing; while I acknowledge their contributions, I am not addressing the overt role of the primary Mathematics or English language curriculum in this process.

The study addresses a number of key research questions:

- What opportunities are available for children to develop temporal ways of knowing?
- How do student teachers experience being apprenticed into the available culture for teaching history and understanding temporality at primary level?
- What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding the dynamics of children's temporal ways of knowing?

My study argues that the skill of developing a deeper understanding of time is a key prerequisite in connecting with, and constructing, understandings and frameworks of the past. Building on and integrating the work of other researchers, the study advances a view of temporality as complex, multi-faceted and developmental. In particular, the study explores the school's contribution to this process, identifying some patterns in and challenges for classroom practice and the professional development of teachers.

Research Design:

In addressing the research questions, the study uses a mixed methods research design, comprising an analysis of history textbooks (n=14), a survey among final year student teachers (n=150) about their teaching of history, and school-based interviews with primary school children (n=12). More specifically, the research comprises three inter-related strands of enquiry, as follows:

1. a content analysis of history textbooks, the quintessential mediators of the curriculum (Stray, 1994; Valverde et al., 2002), was undertaken to determine their provision for temporal ways of knowing, at three distinct class levels;
2. a survey was undertaken of student teachers' experiences of being apprenticed into the available culture for teaching history during their final school placements, especially their use of history textbooks as resources;
3. school-based qualitative interviews were conducted with children, utilising cognitive-developmental and sociocultural perspectives on how children develop temporal ways of knowing.

Claims:

A number of claims emerge from the study, which can offer insights into, and guide, a more elaborate framing of how temporal ways of knowing can be approached in the history curriculum, leading, I argue, to deeper and more flexible historical understanding (Bransford et al., 2000).

The study's main claims are as follows:

1. Historical understanding: that deep and flexible historical understanding is much broader than temporality, yet inseparable from it;
2. Curriculum: there is a fundamental need for an elaborated well-defined curriculum framework for developing temporal cognition;
3. Curriculum framing of temporal ways of knowing: that curriculum and pedagogy in primary history is based on an under-elaborated and developmentalist assumptions/bias, in tandem with insufficient recognition afforded to the sociocultural influences;
4. Textbooks:
   a. that most history textbooks in Ireland afford temporality a low status and provide inadequate support for developing temporal ways of knowing, with some notable exceptions;
   b. variation in textbooks: there are significant divergences in the pedagogical approaches adopted by textbook authors;
   c. student teachers are judicious in their selection and use of history textbooks and other resources in ensuring that they reflect constructivist principles of the curriculum.
5. Teaching and learning:
   a. 'Intended' curriculum-to-textbook gap: there is a gap between the 'intended' curriculum, vis-à-vis the extent to which it provides sufficient opportunities to foster temporal understanding in deep and flexible ways;
   b. School culture: school culture played a central role in mediating the teaching of history and its influence on student teachers;
   c. Where children had limited temporal language, this affected their ability to articulate the temporal aspects of historical understanding.

Significance of this study:

The study contributes to the extant literature and scholarly debate in the area of temporality; it corroborates the findings of a number of key researchers, yet it also challenges and elaborates aspects of their findings, utilising claims from the empirical component to identify divergences and convergences with existing literature.

Drawing upon both the review of literature and the study claims, I make a case for a re-theorisation of temporal ways of knowing in curriculum and pedagogy. I argue for a more elaborated framing of temporality in history curricula as an important basis for the enactment of deeper and more flexible historical understanding. The findings have a potential contribution to make in influencing policy and pedagogy in establishing an elaborated and well-defined curriculum framework for developing temporal cognition at both national and international levels. Specifically, the study presents an elaborated framework for the development of temporal understanding at a curriculum level.

Chapter 1:

Study Context and Focus

1.0: Introduction: temporality and historical understanding

It is perfectly true, as philosophers say, that life must be understood backwards.
But they forget the other proposition, that it must be lived forwards.

Soren Kierkegaard (1837).

This quotation is attributed to the prolific writings of the 19th century Danish existentialist philosopher and theologian, Soren A. Kierkegaard. It encapsulates the essence of what this study proposes to examine, namely, how young children of primary school age can develop temporal ways of knowing, including an ability to "understand backwards" in time, or connect with life in the past by developing a conceptual understanding of temporality.

The research explicates the contemporary theories of learning about temporality, and it examines the relationship between temporality, first-order and additional second-order historical concepts in teaching for deep and flexible historical understanding. First-order concepts have been described by Lee and Ashby (2000) as mastery of the basic, substantive content to be taught, while second-order concepts are deemed by Dickinson and Lee (1994) to be "the key to progression" (p. 1), 'provid(ing) the tools for doing history, for thinking historically' (Peck and Seixas, 2008, p. 1021). Figure 1 below demonstrates this relationship and the central place of temporality in the process of thinking historically.

Figure 1: Relationship of first-order and second-order concepts to historical understanding

First-order concepts

Basic substantive content to be taught - information, dates, facts and concepts (Nichol, 2013)

Eg. *revolution, president,* and *nation*'(Peck and Seixas, 2008, p. 1021).

Deep and Flexible Historical Understanding

Second-order concepts

Involves skills, processes, procedures, protocols and concepts of 'doing history' (Nichol, 2013)

Time and chronology

Cause and Effect

Change and continuity

Using historical evidence

Imagination and empathy

Specifically, the study addresses a number of key research questions:

1. What opportunities are available for children to develop temporal ways of knowing?

2. How do student teachers experience being apprenticed into the available culture for teaching history and understanding temporality at primary level?

3. What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding the dynamics of children's temporal ways of knowing?

My study highlights the centrality of temporal cognition in the development of children's historical understanding, and it establishes that the skill of developing a deeper sense of historical time is a key prerequisite in connecting with and developing frameworks of the past (Stow and Haydn, 2000). The study charts the extent to which the Irish primary school history curriculum recognises and promotes its development. Furthermore, it outlines the complex, multi-faceted attributes of temporality, and it demonstrates the developmental and contextual nature of such understanding. The school culture's contribution to temporality is explored, as mediated by school resources, especially history textbooks. The influence of a comprehensive range of cognitive-developmental facets of this learning is identified, and significant sociocultural influences on children's understanding of time are recognised.

For the purposes of this study, I am focussing on an appraisal of the history component of the primary school curriculum and its contribution to temporal understanding; while I acknowledge their contributions, I am not addressing the overt role of the primary Mathematics or English language curriculum in this process. The mathematics curriculum addresses the concept of "clock time" and the literacy curriculum supports the development of temporal language, yet it is within the history curriculum that the broad range of skills and concepts relating to the wider issue of temporality are primarily addressed.

In the literature review, I provide an account of the scholarly debate pertaining to the topic, and I highlight what I argue is an under elaborated framing of temporality in the Irish primary history curriculum documents, and in school resources for history teaching, especially

textbooks and workbooks (Chapter 4). I outline the implications of under elaborated framing of temporality, not just for textbooks, but also for pedagogy. My study aims to contribute to scholarly debate in the area, at an Irish level and beyond. Using a mixed methods research design and three different methodological approaches, a significant quantity of data was generated, and key insights are provided into many facets of children's temporal understanding and related influences. Thus, three inter-related strands of research were compiled, and the framework for this undertaking is outlined in Figure 2 below:

Figure 2: Three research questions and associated research design

Strand 1
- **Research question 1**: What opportunities are available for children to develop temporal ways of knowing?
- **Research method**: Content analysis of textbooks

Strand 2
- **Research question 2**: How do student teachers experience being apprenticed into the available culture for teaching history and understanding temporality at primary level?
- **Research Method**: Survey

Strand 3
- **Research question 3**: What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding the dynamics of children's temporal ways of knowing?
- **Research Method**: School-based qualitative interviews with children

It is envisaged that the review of literature undertaken, as well as the research findings and claims emanating from them, will contribute to a re-conceptualisation of future curriculum and pedagogical approaches to temporal cognition, in terms of temporal ways of knowing. In particular, my study explicates the relationship between cognitive-developmental and sociocultural dimensions of temporal ways of knowing within wider historical understanding; while cognitive developmental theories are significantly acknowledged in the literature on

learning processes, the situated social and cultural influences on temporal learning are not as readily recognised. Thus, one could argue that the intended curriculum offered in Ireland, Northern Ireland, England, Scotland and Wales (section 2.5 below), has an insufficiently elaborated framing of temporality. The re-theorisation of temporal understanding that I am proposing might positively influence future curriculum developments in primary history and inform related curriculum policy developments. It is envisaged that what is extrapolated from the cognitive-developmental and sociocultural theories can potentially influence classroom practice. My study is offering a more expansive approach, drawing on cognitive-developmental insights, and presenting a more deeply cultural view of temporal ways of knowing.

1.1: Professional influences on my research

In addressing these research questions, I am cognisant of Leedy and Ormrod's (2001) acknowledgement of the multiple perspectives we bring to research, based on our past experiences. Inevitably, my work as a researcher is embedded in the varied professional experiences I have had during my career as an educator; I now outline a number of these influences on my approach to this study. My study is reflective of the constructivist paradigm, especially in its exposition of an array of both cognitive-developmental and socio constructivist views of learning in history.

Implications of constructivist theories for the development of historical ways of knowing and related pedagogy are clear: the child constructs his own understanding, knowledge and "frameworks of the past" (Stow and Haydn, 2000) through the experience of engaging with new learning, and he then reflects upon them. When new concepts and information are encountered, the child has to reconcile it with his previously held ideas and experience,

perhaps accommodating changes in what is believed, or considering the new information as irrelevant.   Yet, it is important to acknowledge that learning in history poses unique challenges for the child, most notably because of their limited, if any, personal experience of living through historical events or happenings in the past.   Any such experiences that they might have, even relatively recent ones (for example, the 9/11terrorist attack in the USA), are likely to emanate from second-hand sources, rather than from direct experience, and are therefore encountered through such resources as the mediating lens of a TV documentary, or a written account of someone else's story of the past.   Often, as my research attests (Chapter 4), such sources are not immediately accessible to the young child, either in their language, or in their approach, and thus, the historical knowledge can be presented in ways that is not readily comprehensible.

In any case, the constructivist theory posits that the child is an active agent in their own creation of knowledge of the past, asking questions, exploring and assessing what is meaningful. The teacher, as facilitator of learning, ensures that child's pre-existing conceptions are explored and understood, while guiding and developing learning activities. In the constructivist classroom, both the child and the teacher views historical knowledge not as "inert factoids to be memorised" (Grennan Brooks, 2011), but as a dynamic, ever-changing view of the world we live in, and the ability to successfully interrogate and explore that view.

Yet, developmental psychologists such as Gopnik et al. (2001), whose work entitled *The Scientist in the Crib* challenges traditional constructivist beliefs and urges us to focus on new and emerging behavioural, psychological and philosophical issues surrounding early learning, in coming to understand more fully children's constructions of learning.   They posit that hundreds of rigorous studies about babies and children in the last two decades alone have

revolutionised our ideas about the nature of the human mind and brain. They argue that modern scientific techniques can teach us that even the youngest infants already know a great deal more that we might have believed about objects, people and language. Such views contest earlier constructivist beliefs held by philosophers and psychologists, that babies and young children are irrational, illogical and amoral, unable to accommodate the perspective of others, or understand cause and effect. They posit that even toddlers can think in a logical manner, arriving at abstract principles early and quickly. They claim that children have implicit learning methods and an intrinsic ability to explore, that are as powerful and intelligent as those of scientists, where "the crib, the house and the backyard are excellent laboratories" (p. 3), affording us opportunities other than scientific, to "learn what it means to be human" (p. 2).

In subscribing to this constructivist paradigm, a basic assumption guiding my work is that temporal ways of knowing are diverse and socially constructed; I am attempting to identify and understand the intricate processes inherent in developing temporality, cognisant of the complex and diverse lived experiences of the respondents who have participated in the research process. I am endeavouring to identify this process "from the point of view of those who live it" (Schwandt, 2000). Congruent with Lincoln and Guba's (2000) recognition that qualitative methods are preferred by researchers working in the constructivist paradigm, I have chosen to carry out two studies using qualitative methods, so that I can recognise constructions held by people in the particular contexts. The first involves participatory research undertaken with student teachers; the second involves action research conducted with children and teachers in schools. However, these writers also recognise that quantitative methods can be used within this paradigm when it is appropriate to do so; accordingly, I am

using a quantitative content analysis model to determine the approach to temporality in primary history textbooks.

As a teacher-educator in primary history, my interest in the topic of temporality emanates from my concern with both pedagogy and curriculum development. I have a keen interest in determining how the theoretical knowledge that I have acquired through this study can influence common everyday practice in history teaching, as well as seeing it reflected in the methodological approaches of textbooks, workbooks and a diverse range of other resources, including ICT. In Figure 20, chapter 7, I demonstrate the practical application of this learning in a how a recent curriculum project has been designed.

Similarly, as a former Director of Teaching Practice in my institution (1998-2006) and External Examiner for teaching practice in another Irish Teacher Education institution (1998-2008), I am committed to identifying and establishing best practice with student teachers in relation to the development of historical understanding. I endeavour to challenge some of the overly-simplistic, ineffectual approaches to history teaching generally, and temporality specifically, that can be observed on student placements. For example, I have often witnessed adult constructions and treatments of such topics as "Causes of the Great Famine in Ireland", listed on a Power Point presentation, devoid of imagery, with no reference to children's personal experiences of being hungry, or elicitation of modern examples at a local or global level of poverty, deprivation and famine. Likewise, dates can be presented without context or a meaningful framework, rendering them inaccessible and intangible. Through this study, I am keenly interested in identifying frameworks which challenge and enable student teachers to adopt pedagogical approaches that allow for more meaningful development of historical understanding in classrooms, while also determining how prior and

current experiences of being taught history can influence students' own current and anticipated pedagogical approaches.

Reflecting my experiences as a teacher educator over the last two decades, while there is a growing body of literature on the teaching of history in Northern Ireland and the Republic of Ireland, the specific relationship between temporal ways of knowing and historical understanding has not been a focus of study. So, in undertaking this thesis, I endeavour to understand temporality among primary school children, with potential implications for curriculum design, teacher education and pedagogical practice in Ireland and beyond.

However, primarily, my interest in children's understandings of temporal ways of knowing stems from a fascination I have with comments I hear children make about the topic, even from a very young stage. While some of these comments are commonly heard in a classroom context as I observe student teachers teach, others can be heard informally, in the course of everyday conversation or interaction with children. Reflective of Gopnik's (2001) assertion that children's observations "can cause us to ask deeper questions" (p. 4), I continue to find such utterances to be powerful and insightful in providing a glimpse of how they think about and conceptualise time, and its significance in their everyday lives. I am mindful of Hirschfeld's (2002) assertion that an "impoverished view" (p. 618) of cultural learning exists, that overestimates the roles that adults play, and underestimates the contribution that children make to cultural reproduction. Thus, over a number of years of my professional life, I have collected and documented many such comments that I have heard children make, and I encourage the student teachers with whom I work to do likewise. Principally, I use them to illustrate the professional challenges inherent in coming to understand more fully how children cognitively engage with, and articulate, their knowledge of time.

Thus, a key focus of my study involves embracing this considerable challenge in making sense of, and interpreting, such utterances. Informed primarily by the prolific noteworthy writings of Piaget (1954), Friedman (1993), Hodkinson (2003), Hirschfeld (2002), Hoodless (2002), Dickinson and Lee (1994) and Wineburg (2001), among others (as examined in the literature review), my study endeavours to provide a deeper understanding of the temporal developmental milestones children arrive at through such influences as their school, culture and society. In order to illustrate the origins of my interest in children's historical understanding, the following section provides some exemplars of temporal ways of knowing in childhood. Taken together, these vignettes prompted me to reflect on the trajectory of one child's intricate temporalisation process. In doing so, they help elucidate the disparity that exists between adults' and children's narratives about time; they also illustrate the influence of such adult constructions in ordering the world, especially the child's temporal world.

1.2: Vignettes to illustrate the complex, multifaceted nature of temporal cognition

These vignettes relate to the reflections of my youngest son, Barry, at ages 5, 9 and 11 years respectively, and I use them here to elucidate the multifarious challenges inherent in children's development of temporality. They demonstrate a progression and level of maturation over the 6 year time span in the assimilation of temporal understanding, reflecting what Booth (1993) describes as an "invariant hierarchy" (p. 3).

In truth, I needed much persuasion from my supervisors before I deemed these reflections (which were very dear to my heart as a mother) as worthy of inclusion in this research. Despite subscribing deeply to Gopnik's (2001) view of the value of children's comments, questions and curiosity in developmental research, in nudging us as adults towards asking

deeper questions – "where on earth did he get that from?" (p. 3), I wavered over the dilemma that, however thought-provoking for me as a researcher, using citations from my own child might not make for worthy research. Despite encouragement to the contrary, Barry's identity only emerged in the very final draft of this work, amid a still lingering discomfort on my part about over-personalising the work. Yet, it is clear that my insider information on what he has to say provides certain insights that I might not otherwise have. Thus, I have chosen comments he made at these three specific ages, as they correspond with the age levels at which two of the significant pieces of research are later undertaken with children, the content analysis of history textbooks and the school-based qualitative interviews. Additional vignettes from my growing collection are utilised in chapter 2 to illustrate a number of the big theories on time in social science, as presented. In each case, Barry's exact words and the precise context are set out, followed by a deconstruction and interpretation of his temporal cognition at that point in time. I am mindful that this deconstruction emanates from my adult perspective of temporality, which is likely to be limited in itself.

1.2.1: Vignette 1: Understanding "twins"

Contextual information: Barry, aged 5 years, announces to me that he has been invited to the birthday party of "the twins" in his junior infant class the following weekend. Not readily knowing whether they were older or younger than him, I asked how old the twins are.

Barry's words:

"I know that Ian will be six, but I have no idea how old Emma is going to be".

Deconstruction offered as an interpretation of the child's temporal cognition:

Congruent with the Piaget's (1954) significant and comprehensive analysis of children's ideas of age, as delineated in section 2.3 of this study, this child appears to be unable to

differentiate between the finer understandings of the time-related components (p. 546) of comparing temporal intervals (how long a time period has elapsed since an occurrence), simultaneity (the ability to understand that related or unrelated events can happen at the same time), succession (understanding that events can happen one after another), and synchronicity (an understanding that events and occurrences can happen at precisely the same time). At this stage, there is evidence of his inability to grasp the ideas of succession and duration operationally. Thus, his consolidation of the concept of duration is incomplete; he has not established the concept that twins have the same age, and he appears to be drawing on what Gruber and Voneche (1977) term "the subjective sense of inner time" in his determination of how old each of the twins are. As yet, he has not constructed a sense of objective time; this reflects Piaget's conclusion that before the age of 7 or 8, the child is not capable of reasoning about several possibilities at the same time.

Barry's utterance also appears to reflect what Casasanto and Boroditsky (2008) refer to as ignoring irrelevant temporal information; quite simply, Ian's birthday is more important to Barry than Emma's, since Ian is his close friend. This is supported by Gruber and Voneche's (1977) theory that at this stage, a child's language is marked by egocentric evaluations of the facts. He may also be drawing on an emerging sense of autobiographical memory, as outlined by Povinelli et al. (1996, section 2.5.2.4 of the literature review). It is likely that he relates to the fact that Ian is older than him, since his birthday party occurs earlier than his own. While the timing of Ian's birthday party provides a tangible milestone for him, relative to his own, no precise timing is articulated; again, this reflects Casasanto and Boroditsky's (2008) assertion that at this point, temporal cognition is compounded by the lack of concrete representation – the child cannot see the temporal, he can only imagine it.

The influence of cultural mediation on Barry's cognition is also recognised here: drawing on the sociocultural theories of learning outlined in section 2.4 below, it is evident that Barry is engaged in the process of constructing knowledge from his social world and integrating it into a pre-existing schema (Wertsch, 1998), yet the learning is not appropriated fully (Cook et al., 2002), as yet. Such data also concurs with the theory of Wilschut (2010, section 1.4.2 below) regarding the subjective nature of how human time is experienced by children.

1.2.2: Vignette 2: "JFK and 9/11"

Contextual information: Barry is now aged 9, and appears to have a very keen interest in history topics in general. He is particularly concerned to learn details about the life and death of President John F. Kennedy and would be deemed to have a broad knowledge of the topic, capable of recalling specific dates and details of, for example, the day when President Kennedy was assassinated. In addition, he has a wide-ranging interest in, and knowledge of, the topic of the 9/11 terrorist attack in the United States.   In September 2011, while watching a tenth anniversary television documentary on the disaster, he observed the sequence of events, as presented, especially the order in which the two planes crashed into the Twin Towers, followed later by a third plane crashing into the Pentagon.

Barry's words:

"Was JFK actually in the Pentagon when the plane crashed"?

Deconstruction offered as an interpretation of the child's temporal cognition:

Wineburg's (2001) research in the area of historical understanding (as outlined in section 2.2.4 of the literature review) provides captivating insights into the interpretation of Barry's thinking at this point in time. The process for the child appears to reflect what he terms "navigating the tension between the familiar and the strange" (p. 3). Given his prior

experiences and knowledge, it is reasonable to conclude that he is not displaying an information deficit. He demonstrates a level of comfort and familiarity with the topic, as exemplified in his reference to "JFK", his understanding of the term "9/11" and his recognition that he is watching a tenth anniversary commemoration of the events. Likewise, he appears to clearly understand that the Twin Towers and Pentagon calamitous events were geographically located far from each other. Yet, crucially despite his recognition of the spatial differences, he appears to be erroneously situating the two events together in time and ignoring the time span that exists between them. This is congruent with Piaget's (1969) theory (section 2.3.4, literature review) relating to the asymmetry that exists at this stage between children's conceptions of time and space. Bransford and Donovan (2005) provide a further key insight here, in their distinction between what they see as the existence of the factual knowledge, but the lack of a supporting conceptual framework.

Further insight into the complexity of the child's understanding is provided by an appreciation of "anachronies" (section 2.6.1.6, literature review) or what Genette (1980) identified as jumps in time, or discordances between the two orderings of a child's story or narrative. Clearly, Barry is associating the two events (the Pentagon appears to be the connection here); in doing so, it seems that he is omitting the one significant detail of the discrepancy in the timespan. Specifically, this jump backwards in time is referred to as "analepsis" (Barrow, 1987) and it epitomises one of the most challenging aspects of temporality to be developed by the child. Such an interpretation is congruent with Fox's assertion (1993) that such time-related relationships are challenging for a child and demand an advanced understanding of how events in a story can take place side-by-side and overlap at some point.

The influence of cultural advantage (Lamont, 2000) on the child's cognition must also be acknowledged here, as clearly, the child is encouraged to gain deeper insight into an already familiar topic, by viewing historical documentaries with his family. Congruent with the theories of sociologists such as Lareau (2003), the unequivocal influence of parents and their social class on the child's learning is evident. These culturally-oriented theories will be examined in section 2.4.7 below.

1.2.3: Vignette 3: "Time travel"

Contextual information: Barry is now aged 11, returning home from a holiday abroad, having just disembarked from a flight at an airport. He makes a random comment.

Barry's words:

"You know, it's actually possible to time travel. With the time zones and all, you could actually do it".

Deconstruction offered as an interpretation of the child's temporal cognition:

Significantly, Barry did not experience travelling through a time zone on this occasion, although he had previous experience of doing so. He appears to be reflecting a more advanced ability to link what McCormack and Hoerl (2007, section 2.6.1.5, literature review) term "temporal events and causal relationships between them" (p. 168), than was evident heretofore. In essence, he is perceiving a relationship between events (the plane travel and the distance covered), and their effect on subsequent events (clock time when he reaches his destination). Clearly, he has now grasped the causal significance of temporal order information, though this understanding was not reflected in the earlier vignette. His use of the word "actually" twice is interesting; I interpret it as "the penny dropping" for him – he has thought about this before, but is now displaying a confidence about his personal

understanding of the theory. Congruent with the work of Weist (1986) and Friedman (1978), he is simply changing his "model of the world" (Friedman, p. 268) to make an appropriate inference about a current state of the world. While the prerequisite skills of temporal updating abilities were evident at 9 years of age, they were more rudimentary and better defined now.

Most notably, from Barry's comments, it is evident that he has developed a clearly refined grasp of the cognitively challenging "anachronies" alluded to in Vignette 2 above. In this instance, he is confidently using what Genette (1980) terms "prolepsis", defined as a "narrative manoeuver that consists of narrating or evoking in advance an event that will take place later" (p. 16). It is understood as an advanced ability to reason about, or anticipate, something that could happen in the future, whether immediate or long range.

His cognition unequivocally reflects the principle of the embeddedness of such learning in his life world, a theme which I draw upon in each of the strands to follow. It is reminiscent of the distinction drawn by Vygotsky (1987) between "everyday concepts" and "academic concepts" (section 2.4.3 below), as his school-based work on time-zones (Geography curriculum, level 4), inevitably has been assimilated into his recent experience of travel. Clearly, his thinking is aided by the "cultural capital" (Bourdieu, 1986) he inherits from the family milieu and the many and varied influences on his life in the form of travel, the media and information and communication technology (Hoodless, 2002, section 2.2.2).

These vignettes demonstrate the complex, developmental nature of coming to temporal ways of knowing. They highlight the intricacies involved in determining the developmental nature of temporality, and in identifying the particular stages at which the child acquires this

understanding. I have found it profoundly challenging to decipher the thought process involved for my own individual child, and my deconstruction is open to different interpretations. The challenge to decipher the level of temporal cognition of children in a class size of up to 30 is very significant, and worthy of further consideration. In chapter 2, I examine the degree to which the complexities of temporal cognition are recognised or reflected in both pedagogy and curriculum, by examining the primary history curricula in England and Ireland. Now, I trace the development of some characteristic themes relating to the meaning of "time", from the classical to the modern and post-modern, from the subjective to the objective.

1.3: What is time? Some characteristic themes

What then is time?
If no one asks of me, I know;
If I wish to explain to him who asks, I know not (St. Augustine, AD 398).

Time has been a major subject of religion, philosophy and science, but a universal understanding of it as a concept, has consistently eluded the greatest scholars. The apparent simplicity and elusiveness of the concept has been expressed by St. Augustine in this much-quoted phrase, which offers a classical theory of time, whose dominant conceptual notion contrasts sharply with both the cognitive-developmental and sociocultural views explored later in sections 2.3 and 2.4 of this work. He theorised about whether time actually exists at all, and he argued that time in the past is not real as it does not exist anymore, time in the future does not exist either as it has not happened yet, so we are only left with the time of "now" which is happening in this instant second. Yet, an understanding of the now is further complicated by the fact that it passes as soon as the instant is over. He questioned how time can actually exist, apart from this instantaneous present moment and accordingly, whether we

can actually look to past and future time as anything real. While he tried to answer the apparent contradiction by claiming that past time can only be thought of as past if one is thinking of it in the present, he identified three times:

> ... a present of things past, a present of things present, and a present of things future. The present of things past is memory, the present of things present is sight, and the present of things future is expectation (p. 288).

St. Augustine concluded that the extension of time from present to past and future is a distension of the mind (*distentio animi*), which means that time exists in the shape of memories of the past, expectations of the future and visions of the present. He perceived this understanding as relying on the subjective way human beings think about it, yet he was not fully happy with this theory and prayed for a fuller understanding:

> My soul yearns to know this most entangled enigma. I confess to Thee, O Lord, that I am as yet ignorant what time is (p. 230).

O' Connor and Robertson (2002) argue that St. Augustine was right to feel that his ideas were less than satisfactory, yet that said, they argue that he had rationalised more deeply about time than anyone seems to have done before him, including the greatest of the Greek philosophers, and more deeply than anyone else seems to have done during the following one thousand years:

> If his ideas are less than satisfactory, at least St Augustine has appreciated for the first time what a complex and puzzling concept time is (p. 3).

The writers quote Hausheer (1937), in recognising the profound nature of St. Augustine's contribution to an understanding of this intricate area:

Few men have been as intensely sensitive to the pathos of mutability, of the rapidity, transitoriness and irreversibility of time (p. 503).

According to the writers, apart from this subjective "here and now" philosophical approach, contrasting viewpoints on time divided many prominent philosophers. Dating back to the Babylonians in the 5th century BC, they claim that it is possible to trace the development of a system for measuring time, using the 24-hour day, the convention of 60 seconds in a minute and 60 minutes in an hour. They note some objective views of time that emerged which argued that there is a uniform passage of time which progresses steadily, no matter whether or how it is personally experienced by anyone. Among them was the view of Sir Isaac Newton (1687), who postulated that time had a steadily progressing nature that is "absolute time" (p. 103), unrelated to any movement or change which he saw as "an emanent effect of God". This view of time is sometimes referred to as "Newtonian time" and the writers cite Turetzky (1998), who states that his view was heavily influenced by the laws of nature, with time passing in a steady, uniform way, without regard to anything else that might be happening in the world. According to O' Connor and Robertson (2002), Newton saw this as absolute and different from ways we measure time, which he saw as relative.

O' Connor and Robertson (2002) point out that Einstein later (1961) refuted the absolute nature of time and proved that time is relative. They explain his theory thus: with the proper technology, such as a very fast spaceship, one person is able to experience several days, while another person simultaneously experiences only a few hours or minutes before they meet up again. The person in the spaceship only needs to travel near to the speed of light. The faster they travel, the slower their time will pass, relative to someone planted firmly on the Earth. Thus, according to Einstein, time depends on the speed of movement.

O' Connor and Robertson (2002) examine the earlier, opposing view of Immanuel Kant (1781), who argued that time does not refer to any kind of container that events and objects move through, nor to any entity that flows. Instead, he submits that time is part of a fundamental intellectual structure, together with space and number, within which humans sequence and compare events. This view holds that time is neither an event nor a thing, and thus is not, in itself, measurable, nor can it be travelled.

O' Connor and Robertson (2002) point out that temporal measurement preoccupied scientists and technologists, and was a prime motivation in navigation and astronomy. Periodic events and periodic motion have long served as standards for units of time. Examples of this time measurement include the patterns and phases of the sun and moon, the human heart beating so many times in a minute, and the steady ticking of a clock. Time is a part of the measuring system used to sequence events, to compare the durations of events and the intervals between them, and to quantify rates of change such as the motions of objects. Thus, as events happen, they are continually changing and they become located further and further in the past.

The writers (2002) examine Newton's basic assumptions, based on a linear conception of time, which still have relevance in the present day. They explain that in our modern daily lives, such a linear approach is reflected in our strong reliance on clock time as a standard measurement tool. After the Industrial Revolution, western societies introduced an objective, regularly-progressing time into their perspectives on the world, which sees time as a universal concept that is measured the same way by all people. The advantages of having an operational definition of time are evident for the efficient functioning of society. Thus, adherence to clock time became a commonly accepted norm. Likewise, the use of calendars became commonplace to measure linear sequences of key events such as birthdays, days of

national celebration and other personal significant events that come about on a cyclical basis – once a year, once a month, once each week, etc. It is important to recognise that it is this same adult construction of time that children experience from their birth in their homes, schools and communities.   This study gives ample credence to the importance of such cultural mediation in their conceptual understanding of time, as charted in section 2.4 of the work.

1.4: Is "time" a universally accepted concept? "Time" in the culture and life of the Amondawa Tribe, Brazil

Given this linear construction, it is widely assumed that there is a natural conceptual understanding of time, which is universally held and applied on a wide-scale basis. Such an understanding presupposes that a list of conventional temporal terms are normative, and based on a measurement system which segments and measures temporal duration. Phrases associated with "time" are prolific in our daily parlance, and children are assimilated into this language of time from a young age, as evidenced in the 3 inter-related research strands of this study (chapters 4, 5 and 6). The novelist, Mitch Albom (2012) provides a contemporary perspective on our use of temporal language; he claims that there are as many expressions with "time" as there are minutes in a day:

> …pass time, waste time, kill time, lose time, in good time, about time, take your time, save time, a long time, right on time, out of time, mind the time, be on time, spare time, keep time, stall for time. But once, there was no word for it at all. Because no-one was counting (p.18).

He urges the reader to imagine living their life outside of this convention, without timekeeping, and he observes

> … you probably can't. You know the month, the year, the day of the week. There is a clock on your wall or the dashboard of your car. You have a schedule, a calendar, a time for dinner or a movie. Yet, all around you, timekeeping is ignored. Birds are not late. A dog does not check its watch. Deer do not fret over passing birthdays (p. 8).

His work points to the subjective nature of time and the ways we construct time through language and symbolism. It underscored the view that time is not solely an objective experience outside of us.

Recent research (1997) conducted by Sinha et al., a team of scientists from Portsmouth University, challenges the notion that "time" is a deeply entrenched human universal concept. The research was conducted in Brazil with a small and diminishing community in the Amazon called the Amondawa people. The key focus of the study was the way in which time is talked about and used in everyday discourse within the community. The researchers conclude that time does not exist in the same way for this community, as it does in our western society. Sinha et al. (1997) state:

> We can now state without doubt that there is at least one language and culture which does not have a concept of time as something that can be measured, counted or talked about in the abstract (p. 138).

This experience provides an interesting reference point from which to begin to explore how children acquire temporal ways of knowing. It challenges the traditional perspective of seeing events as embedded in time; instead, it reflects the practice of a people whose lived experience, on a day-to day basis, provides them with a context within which all members of the community understand and speak about events and their passing with a shared understanding, albeit devoid of the "language of time" commonly understood and articulated.

Thus, an abstract term for time does not exist in the Tupi Kawahib language of the Amondawa. The tribe does not entertain cardinal chronologies, such as ages of individuals, or ordinal chronologies, such as yearly or monthly calendars. Rather, their language and concepts mirror their culture, priorities, needs and goals. Their conversations display a dearth of predictable words, phrases or terms, such as "next week" or "last year". Instead, events in

time are described in such terms as divisions in the day and the rainy and dry seasons of the year. Members of the community do not attribute a number to their age. Instead, they adopt a name to reflect a phase in their life, which changes as their life stage and position within their society is altered. Individuals are categorised in terms of their social status, role in the community and position in the family birth order. Therefore, for example, the youngest child in the community will give up their name and adopt a new one as soon as a new baby is born into the tribe. Likewise, numbers do not appear to exist beyond five and so, the comparative absence of numbers means that time is not described as an abstract, measurable entity, as we might commonly experience it in the western world. Such features of the Amondawa language mean that time reckoning simply does not occur in daily discourse.

However, the indigenous population is now dwindling, owing to contact-induced diseases and cultural influences from the world outside the community. Given the precipitous decline in population, it is accepted that the Amondawa language is in demise and threatened with extinction.

1.4.1: "Time" as a metaphor we live by

The research pertaining to the Amondawa people provides an interesting perspective from which to examine the value of conventional use of metaphors relating to time. The prevalent use of such conventions in our everyday lives has led to an acceptance of such terminology as the norm, and it can be argued that we may not contemplate its impact on how we adopt and utilise such terms in everyday discourse. For the young child who encounters such terminology, it establishes the question of whether there exists an adult construction of time which differs from a child's comprehension. A striking aspect of the young child's concept of time is the immediate "here-and-now" nature of their experience, and how it is expressed.

This theme will be revisited and explored in detail in strand 3 of the research (chapter 6), the school-based qualitative interviews with children.

Sinha et al.'s study deduces that linguistic mapping of time is "conditional, not absolute" (1997, p. 39) and not universal, as may commonly be accepted in everyday discourse. It signals a key foundational shift in social science during the last quarter of the 20th century. This view is reiterated by Lakoff and Johnson, whose work entitled *Metaphors We Live By* (1980), unambiguously establishes the cultural influences on our conceptual system. While the writers do not specifically examine the metaphor of time and its common use in discourse, their work examines the meaning and value of metaphors in our day-to-day lives, interactions and shared understandings. They argue for a better recognition of how profoundly metaphors can shape our view of life in the present, as well as setting up expectations that can determine what life will be like in the future. Applied to time, it helps elucidate the conditional nature of our understanding of such a term. The writers argue that our concepts structure what we notice or do not notice, how we get around in the world and how we relate to other people. Further, they claim that our conceptual system is largely metaphorical, and the way we think, what we experience and what we do every day is very much a matter of metaphor. They contend that the essence of metaphor is to understand and experience one kind of thing in terms of another, and to make coherent certain aspects of our experiences:

> Metaphor is one of our most important tools for trying to comprehend partially what cannot be comprehended totally: our feelings, aesthetic experiences, moral practices, and spiritual awareness (p. 114).

Interestingly, they highlight the extent to which the meaning of a metaphor can be partly determined by our social and cultural experience, and this is of particular significance in my

study, in echoing the significance of socio constructivist influences on children's emerging temporal cognition.

1.4.2: A cyclical conception of time

Cummings (1922, p.46), an early writer of science fiction, is quoted by Wilschut (2010) thus: "time ... is what keeps everything from happening at once". Wilschut (2010) presents a compelling view that firmly refutes the notion that standard clock time accurately represents how we actually experience time, and he highlights instead, the subjective, variable nature of how human time is experienced:

> sometimes it seems to fly, sometimes it seems as if it stands still, as if there will never be an end to a relatively short time span (p. 5).

Resonant with Albom's (2012) assertion above (section 1.4), he contends that this linear model of time management is flawed, since events in our modern daily lives do not always present themselves with such regularity in a constant manner. He cites examples from nature which attest to such an anomaly, so, for instance, sunrise and sunset occur at different times of the day and night at different times of the year. Yet, the use of a standard measurement of a 24 hour clock determines that we retain this daily time measurement tool, despite its crudeness in reflecting the changing nature of the occurrence of such events.

The prolific work of Friedman (1993) in relation to human understanding of the concept of time provides an additional perspective on temporal cognition, also strongly refuting the argument that human thought naturally accommodates a long-lasting, linear notion of time. He describes such a process as unnatural and a "chronological illusion" (p. 60). Instead, he

argues that a cyclical conception of time is naturally accommodated and understood by humans and he cites examples from nature which exemplify such recurrent patterns - the seasons, the daily routines that are familiar to us, the days of the week which have a constant, similar pattern. He argues that such patterns are significant and helpful in ordering our routines. In contrast, he posits that information from a linear image of time rarely has any practical use. Significantly, based on psychological research, he concludes that human memory is ill-disposed to remembering unique events from a linear representation of time, but very apt at remembering information from a cyclical pattern. Wilschut concurs:

> Counting years and putting them on an endless line is not a consequence of nature. Objective clock time and linear calendar time are artificial creations which have to be imposed on our minds … because our minds are not well equipped for them. But we have disciplined ourselves. We have adapted to a logical, but unnatural system. That's why in winter we get up when it is still night, while in summer we stay in bed for hours when the day has long started (p. 6).

Friedman (1993) also points out that, from psychological research, we can conclude that people hardly ever use mathematical chronology in their autobiographical memory, and while we remember certain contexts, representations and images, we hardly ever remember any specific dates or numbered years. Crucially, he refers to "islands of time" (p. 46) existing in our memory as selective, individually meaningful pictures, which do not necessarily fit into one coherent, chronological temporal system. He argues that this type of information has not been stored with the aim to remember time, but with the aim to remember a meaningful context, and we usually require cues in the form of a diary, calendar or personal notes, to assist us in making an accurate reconstruction of the particular occasion. He argues that our memories are not equipped for such information, but rather for more practical cyclic information that we need on a periodic basis.

Many pertinent ideas for my thesis emerge from the theories outlined in this section. The notion is debunked that there exists a universally-accepted notion and meaning of the term "time", despite the prevalence of conventions in our everyday lives that appear to lead to the acceptance of such a term as the norm. Children's lives are immersed in such time conventions also, in the form of home, school and community routines, practices and language. Significantly, these are adult, linear metaphors and constructions that are inevitably assimilated by the child in their day-to-day life experiences, despite the fact that they represent a logical, but unnatural system.

1.5: Framework for the research

The framework for the research conducted in this study is structured around 3 inter-related strands of enquiry which inform each other, and address the key research questions set out in section 1.0 above, as presented in Figure 2. The data and claims emanating from it can potentially contribute to the extant body of informed opinion and scholarly evidence in the area of temporal cognition, as examined in the literature review.

1.5.1: Strand 1 - Content analysis of history textbooks
What opportunities are available for children to develop temporal ways of knowing?

In this research strand, I develop my exposition of the first research question, building on the exploration of the potentially under elaborated statements within official primary history curriculum documents, as outlined in section 2.5 of the literature review. This strand specifically focusses on how the history curriculum contributes to children's temporal cognition, as facilitated by school resources, especially the quintessential mediating tool of the textbook. An examination of extant history textbooks and workbooks is undertaken to

determine their provision for temporality, and the degree to which they reflect the principles of the history curriculum. Specifically, a content analysis model is utilised as a research tool, using a unique rubric designed for this study, informed by the related theories examined in Chapter 3, Research Methodology. The study was conducted on 14 texts at the same three levels as explored in the vignettes above (section 1.2) and in the qualitative interviews outline in strand 3 below: Junior Infants, Third Class and Sixth Class. The nature of each of the history activities presented is outlined, the level of the cognitive challenge they offer is examined, and their potential for temporal cognition is assessed. The data and claims emanating from the study are presented in Chapter 4.

1.5.2: Strand 2 - Survey

How do student teachers experience being apprenticed into the available culture for teaching history and understanding temporality at primary level?

This strand addresses research question 2, in determining how novice teachers experience the available culture in schools for developing children's temporal ways of knowing. Congruent with the theories of Berends (2006, p. 624), a survey method was deemed suitable in gleaning both quantitative and qualitative information and understanding of the social context in which student teachers learn. The survey was administered to undergraduate (n=100) and postgraduate (n=50) students, to determine their experiences of being apprenticed into this culture during their final school placement experiences. Central to this process was an examination of the nature and extent of resources they utilised, among them textbooks, when teaching history lessons at the different class levels. The data presents evidence of the level of reliance by teachers on such materials as resources, and outlines additional/alternative sources and approaches in use. Reasons for their selection are enumerated and respondents'

levels of comfort in teaching the subject are explored. The data and claims emanating from the study are presented in chapter 5.

1.5.3: Strand 3 - School-based qualitative interviews with children

What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding the dynamics of children's temporal ways of knowing?

This third research strand involves qualitative interviews with 12 school children at three different age-levels, to determine the cognitive-developmental and socio-constructivist influences on their conceptual understanding of time, as they progress through the primary school. Congruent with Mertens (2010) advice, two schools were "chosen purposefully" (p. 20), and the medium of narrative text was utilised to generate discussions about time-related aspects of the story with pairs of children at Junior Infant, Third Class and Sixth Class levels. A large quantity of data was generated, and claims emanating from it are presented in chapter 6. A framework for the analysis of the data is established, from the two prevalent perspectives identified in section 1.0 above, the cognitive-developmental and diverse sociocultural influences on children's diversely emergent temporal cognition. In addition, the children's personal, lived experiences of time are observed, by examining the manner in which their time outside of formal school time is scheduling and experienced.

1.6: Timeline for the study

This study commenced in September, 2010 with Strand 1 of the research, involving a review of related literature and an initial content analysis of a selection of history textbooks and workbooks. In hindsight, this starting point can be attributed to my comfort with, and prior

professional experience of, developing and publishing curriculum materials at all 4 levels of the primary school, albeit in the area of SPHE. I was very much within my comfort zone in applying the same skill set here, documenting and analysing the nature of the learning experiences provided for children through the texts. As a teacher-educator, I was naturally drawn to an analysis of the level of cognitive engagement they provide, and I proceeded to ground this review in the available literature. The specific content and focus of the full study began to emerge in early 2011, as the clear ambiguity between the cognitive-developmental and sociocultural influences on temporal understanding began to be exposed in the literature. The restricted body of Irish research pertaining to temporal ways of knowing was evident, though related research with schoolchildren in England provided interesting insights. The literature review continued to develop and be refined, primarily throughout 2011, and ethical approval was acquired to commence Strand 2 of the research, involving the survey of student teachers. This survey was designed and undertaken in October 2011, facilitated by the ease of its distribution to student teachers in the institution in which I work, and related data was presented in December, 2011.

Revisions and refinements were conducted throughout 2012 on the available chapters, guided by the growing literature base. The relative prioritising of temporal cognition on curriculum and pedagogy warranted its own in-depth consideration, addressing extant approaches and perceived limitations of the primary history curricula in Ireland and England. Based on the research undertaken thus far, it became clear that a re-conceptualisation of temporal ways of knowing was required. Ethical approval for Strand 3 of the research was sought and granted in mid-late 2012, and the school-based qualitative interviews were conducted thereafter in December 2012. Transcripts were prepared in December 2012, and related data was presented in January 2013. Initial claims and recommendations emanating from the study

were drafted in February 2013, and the refinement process for each of the 7 chapters continued throughout the following months. A particular focus of the study at this point was the identification of a number of orienting principles that permeated the whole study, as answers to the three research questions were provided. The study was submitted to the School of Education, UCC for consideration in March 2014.

The timeline of the study is represented in Figure 3 below.

Figure 3: Timeline for this study
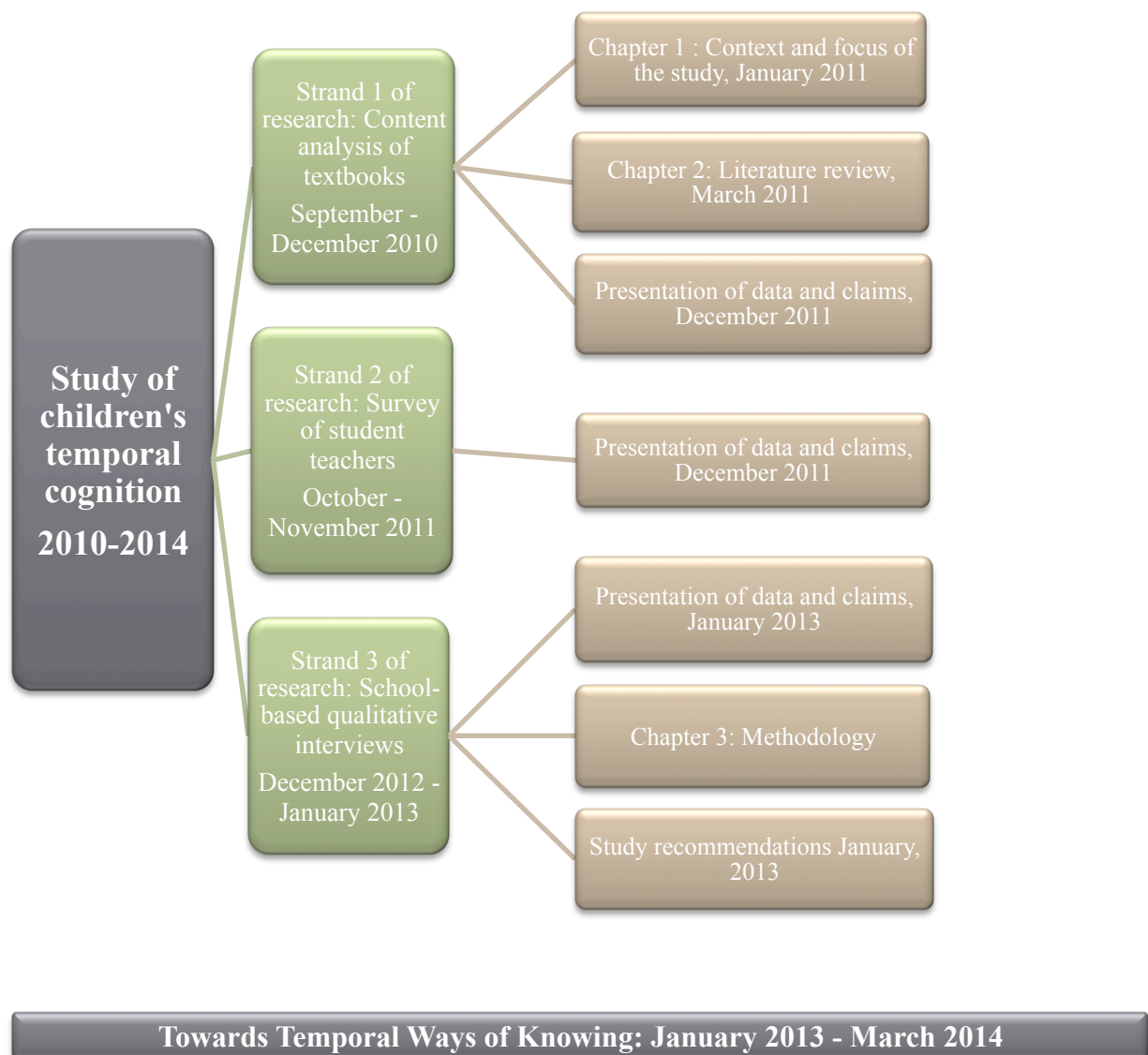
1.7: Conclusion

This chapter establishes three research questions and sets out the context for the study, as well as its focus and intended timeframe. It outlines the potential contribution the study can make to scholarly debate in the area of temporal cognition, as well as its relationship to broader historical understanding, leading to a call for a re-conceptualisation of how this learning - as defined as temporal ways of knowing - can be addressed at the level of curriculum and pedagogy. Powerful insights are provided into the multifaceted, complex nature of children's understandings through the vignettes presented, and these are offered to signal the concomitant challenges for classroom practice, to be explored in section 2.5 below.

A range of diverse characteristic themes on time are explored for the interesting perceptions they offer over the ages, and the notion of a universally accepted definition and shared understanding of the concept of time is challenged. A rationale is presented for the examination of two key influences on this cognition in subsequent chapters, involving the cognitive-developmental, as well as the sociocultural influences on children's temporal ways of knowing.

Chapter 2:

Literature Review

2.0: Introduction

> O! This learning, what a thing it is.
>
> Shakespeare, W., *The Taming of the Shrew*

In this chapter, a wide array of literature is examined pertaining to theories of temporal learning, and the acquisition by children of temporal constructs. Cognitive and developmental sciences over recent decades have produced a foundation for an emerging science of learning in history. This foundation offers conceptions of learning practices and the development of competence performance indicators which can inform teachers in how to support students in their acquisition of historical knowledge and skills. So too, sociocultural theories and the influence of cultural mediation on cognition are well researched and documented. These theories provide an array of diverse, significant perspectives from which to examine children's temporal ways of knowing.

The term 'temporal ways of knowing' is chosen over the terms 'temporal cognition', or 'understanding historical time', as it implies understanding beyond a purely developmentalist dimension and also recognises sociocultural influences on understanding. Thus, a sociocultural lens is brought to bear on the study, balancing the predominant cognitive-developmental view in the literature on temporal cognition. The phrase directly critiques the developmentalism inherent in how 'temporal cognition' is addressed, if at all, in everyday schooling and it implies an emphasis on the processes of learning. This developmentalism is a challenge that is not necessarily addressed by the existing history education research term 'understanding historical time'. Although sociocultural theory is implicitly embedded in the historical understanding literature, in this study, it is explicated.

In establishing a theoretical conception of learning in the area of temporal understanding, an analysis is undertaken of literature on this range of different mechanisms for temporal concept development. Thus, the literature in this chapter is not presented as one unified, homogenous theory on temporal ways of knowing. Rather, as an overarching theme, the two divergent perspectives on temporality are recognised and examined: the cognitive-developmental and the sociocultural. Competing trends in the current conceptualisation are brought into sharp relief, thereby identifying the fundamental contradictions and tensions that exist between these related theories of learning; while cognitive psychology emphasises a developmental approach and seeks to define the developmental processes required by children for the development of time concepts, sociocultural theories emphasise the centrality of cultural mediation on cognition and learning.

Literature is examined that explains the essential role of both first-order and additional second-order concepts in historical understanding and developments in history education in recent decades are charted. I outline literature that contrasts the passive reception of temporal knowledge with how it is actively constructed by the learner; next, I outline theories relating to ways in which concepts are transferred from a social to an individual level, and internalised by the learner. Further, I examine research which envisions temporal learning as an individual process, which can emerge from a very young age, in a continuing, weaving interaction with social phenomena, including peers, teachers and texts.

I conduct an examination of curriculum provision for temporal cognition and the mediating role of the school in providing opportunities for children to develop temporal ways of knowing. This section also focusses on the conceptual approaches and status of temporal

cognition in the Irish history curriculum and its counterpart in England, officially entitled *History in the National Curriculum* (HNC).

The theories relating to temporal learning that comprise the components of the literature review are represented diagrammatically in Figure 4 below. Through this exposition, the study seeks to focus on a deeper theorisation of temporal learning, affording due recognition to both the cognitive-developmental and sociocultural influences on their historical understanding.

Figure 4: Theories relating to temporal learning and childhood examined in framing the thesis
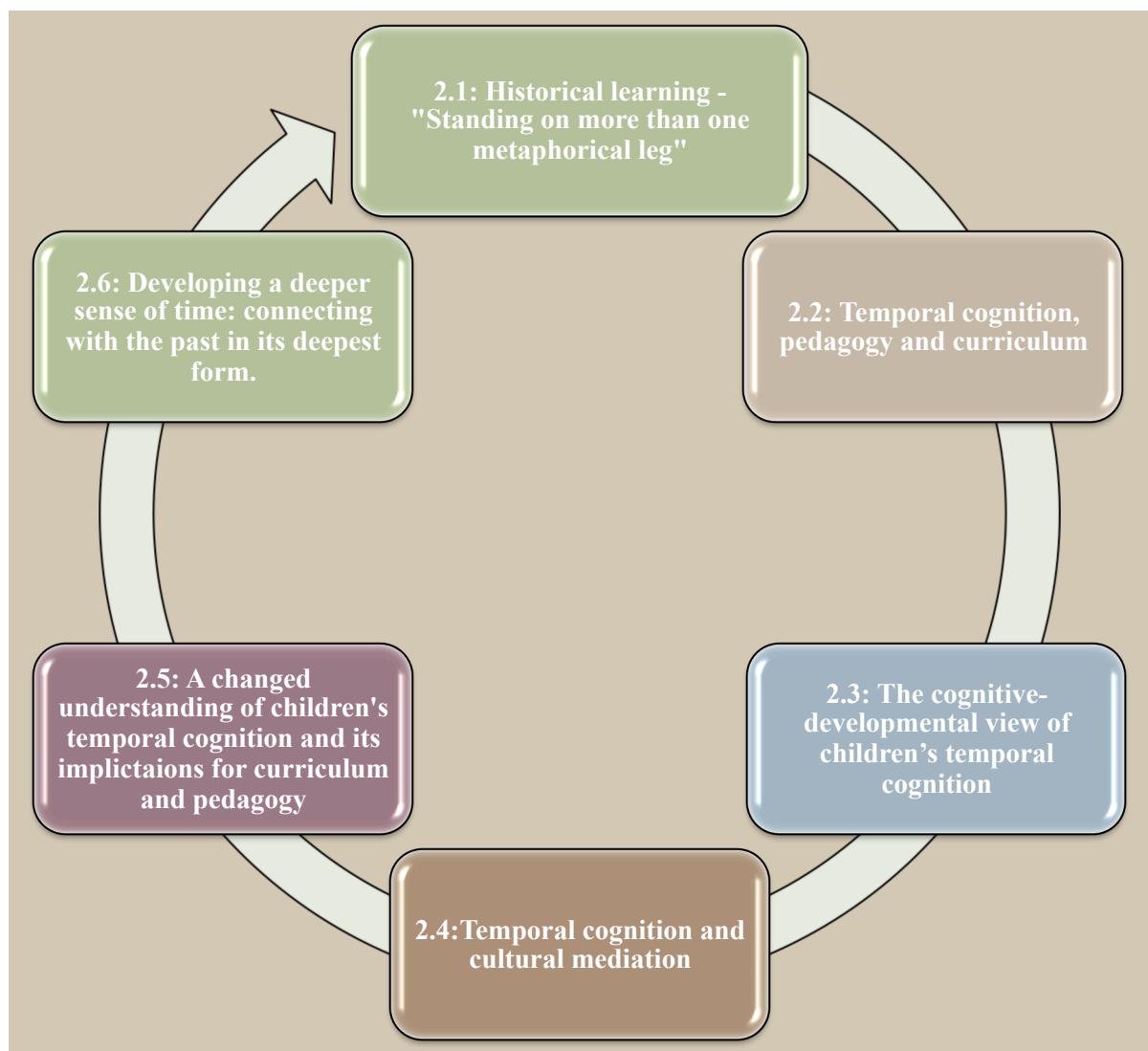
2.1: Historical learning - "Standing on more than one metaphorical leg"

The tensions highlighted in the study between the cognitive-developmental and sociocultural perspectives on temporality resonate with the noteworthy research of Sfard (1998), who espoused two metaphors for learning. Her theories have particular significance, as they argue that in current discourse on learning, educational research is "caught between" (p. 4) the *acquisition* metaphor and the *participation* metaphor, both of which guide our work as learners, teachers and researchers. Sfard (1998) cautions about the demerits of being too closely aligned to any one particular metaphor, which can lead to undesirable practices, regardless of the ideological framework from which it emanates – "moderate to radical constructivist, social interactionist and situationist approaches" (p. 10).

In her exposition of the *acquisition* metaphor, Sfard (1998) argues that from early civilisation, human learning is conceived of as an attainment of something. For example, knowledge is seen to be attained through a process of learning, leading to the formation of concepts. For Sfard, concepts can be understood as basic units of knowledge that can be acquired in various learning situation, and they evolve and develop into more complex cognitive constructs. She identifies (p. 5) an array of relevant terms that can be applied to the acquisition metaphor: knowledge, concept, conception, idea, notion, misconception, meaning, sense, schema, fact, representation, material, content. The learner constructs meaning from and "gains ownership" (p. 5) of the materials that are acquired; they become the learner's "private property" (p. 6). Further, terms that represent the action of making meaning of these constructs abound: reception, acquisition, construction, internalisation, appropriation, transmission, attainment, development, accumulation, grasp (p. 6).

Sfard (1998) cites Cobb (1995) and Smith (1995) who see the *participation* metaphor as pointing to a foundational shift in this approach to learning, with an emphasis on *doing*, as opposed to *acquiring.* She concurs with their view, stating "its importance is pronounced by talk about situatedness, contextuality, cultural embeddedness and social mediation" (p. 6). Thus, the learning environment is diverse and rich with potential for gaining experiences. Likewise, there is a strong importance on the learner fitting into their learning community and embracing it, rather than merely accumulating private possessions (knowledge, concepts). The process involves the newcomer-learner acquiring an understanding of the community's norms, while potentially reforming them.

Sfard (1998) points to the clear dominance of the acquisition metaphor over the participation metaphor in our minds. This resonates with the caveat presented in the conceptual framework of my study: due recognition needs to be afforded to the clear dominance in the literature of the cognitive-developmental emphases over the sociocultural in developing temporal cognition.   She questions whether it is possible or worthwhile to try to unify the two positions. She posits that "the most powerful research is the one that stands on more than one metaphorical leg" (p. 334), and my work embraces this belief. She is a proponent of embracing a multiplicity of metaphors, combining the acquisition and participation positions, thereby allowing the advantages of each to be utilised, while acknowledging that each has its own respective drawbacks which must be kept at bay.

2.2: Temporal cognition, pedagogy and curriculum

2.2.1: Introduction

This section acknowledges and charts the developments and advancements that have occurred in coming to understand children's temporal cognition over the past 40 years, and implications for curriculum and pedagogy are explored. Research on historical understanding is outlined and I particularly argue for both deep and flexible (Bransford et al., 2000) temporal ways of knowing as the basis for historical understanding.

In doing so, I draw on general sociocultural theories of learning and specific research that relates to historical understanding, while specifically linking and highlighting sociocultural influences on temporal ways of knowing. It is important to recognise the sociocultural claims made about learning, such as differences between children's lives, the mediating power of various tools used (language, textbooks, story), as well as policy and curriculum implementation issues. Such claims are already accommodated, if somewhat indirectly, in the advancements made in researching historical understanding. This study makes a contribution in this regard, in making explicit the actual situated cognitive processes involved in the understanding of historical time. By drawing together different sets of literature, the study can show how sociocultural learning theory links with the historical understanding literature, and in doing so, the processes involved in developing temporal ways of knowing can be examined in a situated way that recognises children's diverse experiences and backgrounds.

Further, second-order concepts in history, among them time and chronology, are examined for the manner in which they can support the development of historical understanding. The

level of recognition that is given to temporal cognition at both curriculum and pedagogical levels is examined and the 1999 history curriculum is explored to determine if an under elaborated, developmentalist view is provided of temporal cognition. It is recognised that temporal cognition is situated therein in connection with other mutually reinforcing second-order concepts, such as change and continuity, cause and effect, using historical evidence, as well as the encouragement of local and personal history. The recommended pedagogical approaches and opportunities for temporal ways of knowing at the intended curriculum level are outlined.

Further, evaluations undertaken in the English context are examined for the interesting insights they provide into the curriculum requirements relating to children's temporal language. Interestingly, no related research can be located into any of the three separate curricula for History in Scotland (*Curriculum for Excellence, 2012*), Wales (2008) or Northern Ireland (*The World Around Us*, 2007), so further comparisons cannot be undertaken. Finally, I note interesting distinctions between intended, enacted and assessed curricula, and implications for opportunities for teaching and learning about history are discussed.

2.2.2: Developments in history education

'The coral reef of history is composed of things dead, but in itself is a living thing' (Marshall, 1963, as quoted by Cooper, 2010).

In this section, I explore literature in the area of history education and historical understanding, building further on the link between key constructivist learning theories examined in section 2.1 above and the content and processes of historical enquiry. I trace

seminal developments from the 1970's, which still have influence today, especially in the teaching methods employed and in the learning objectives that are established. I draw particularly on the recent reflections of a number of influential writers who consider the impact of such developments on modern, everyday practice. Their reflections provide interesting perspectives, given the perceived challenges of upholding the status of history in an enacted curriculum that is entrenched in a knowledge hierarchy, as outlined in section 2.5.5 of this work. This literature on historical understanding also addresses many sociocultural principles.

Hawkey (2010) points to this period which began in the 1970's as representing a revolution in history education and still having particular impact on our understanding of the procedural knowledge of how we do history in the classroom today. She attributes much of this development to the 'New History' approach of the Schools Council History Project (1972), which set out to examine and radically rethink an aspect of curriculum that was in serious decline in schools and unpopular with students, deemed to be boring, difficult to learn and without purpose. Hawkey (2010) cites the landmark work of Price (1968) who described history as being in danger of losing its place in the curriculum. Yet, Hawkey (2010) reminds us that, as a result of the overhaul, it is 'now impossible to think of the study of history in classrooms without reference given to concepts such as evidence and processes such as source-based enquiry' (p. 23). Haydn (2010) concurs, citing current whole school planning approaches to history teaching as still reflecting such approaches.

Cooper (2010) refers to Marshall's (1963) position that a basic influence on the child's historical understanding is an awareness that history involves the now and always, thus enabling connections with the story of the past. She saw the local and familiar as central to

such developing awareness and emphasised the importance of the affective connection with any such stories, which she claimed leads to higher commitment and enthusiasm for the subject area. Cooper (2010) explains that Marshall's (1963) insights as a teacher emanated from her direct observations of children's responses to effective classroom practice, and they predated the seminal theories of Coltham and Fines (1971), whose Historical Association pamphlet, *Educational Objectives for the Study of History* had a significant and revolutionary impact on history education, not alone in Britain, but beyond in the intervening years. Likewise, the seminal work of Rogers' (1979) article for the Historical Association, entitled *The New History: Theory into Practice* provided key insights into history education. Rogers (1979) adopted a critical, often contrasting approach to Coltham and Fines (1971), which was less based on a theoretical framework of educational objectives for history to be identified and attained, and was instead more culturally rooted.

Both works inspired improvements in the British context, not alone in the quality of classroom practice, but also, according to Cooper and Nichol (2010) in

> enriching and enhancing the lives of the young citizen through presenting history as a life-long inspirational friend, comforter and supporter of sceptical thinking, grounded in logical, deductive, imaginative and empathetic thinking (p. 7).

Such changes of emphasis were deemed necessary, supplanting the extant approach to history teaching, broadly described by Sheldon (2010) as essentially providing a "received narrative" (p. 9), involving rote memorisation of facts, note taking and a treatment of topics in strict chronological sequence. Sheldon (2010) states that Coltham and Fines (1971) challenged this approach and itemised a progressing series of steps that the child could be expected to master in coming to historical understanding, which placed the emphasis on the action of the learner, not the educator. According to Nichol (2010), *Educational Objectives* was "epochal", in that

"it gave history teachers a clear, detailed rationale for teaching history, grounded in academic history as a discipline" (p. 46). The objectives focussed on skill development, second-order concepts and processes, and particularly emphasised how the child could respond to the learning and imagine what the life of a historical character would be like, thus laying the foundation for the skill of empathy. Their work also highlighted the need for the child to acquire vocabulary, skills used in referencing, as well as an ability to remember newly acquired factual information.

Sheldon (2010) states that Rogers (1979) built on the pioneering work of Coltham and Fines (1971), questioning some aspects of it and postulating that the history education should emulate the work of the professional historian, reconstructing the story of the past by using evidence. He saw history as a knowledge form, encompassing the 'know how' as well as the 'know that' and this became a rationale for the curriculum. Nichol (2013) elaborates on the distinction between these two types of historical knowledge. He claims that "know that" knowledge involves its substantive content, including information, dates, facts and concepts, while "know how" knowledge involves the skills, processes, procedures, protocols and concepts of 'doing history' which result in historical understanding. Rogers (1979) emphasises the direct dependency between the former and the latter.

As Sheldon (2010) notes, Rogers (1979) did not see the role of history as developing historians in miniature, rather he articulated a need to develop children's understanding of the subject matter at a level that was appropriate and incremental. He set out structured learning tasks that were achievable in broadening the child's conceptual understanding, using an in-depth approach. Sheldon (2010), in her critique of Rogers' work (1979), points to the

centrality of children's questions as part of the process of "moving up" (p. 12) in their understanding.

Lee (2010) examined the work of both theorists and concluded that Coltham and Fines' (1971) achievement was to analyse and categorise specifically what is involved in learning history, which could be observed and deemed achievable as objectives. Yet, he points to the limited benefits of utilising behavioural objectives in history teaching, cautioning that such an approach may lead to the establishment of long lists of simple, achievable objectives that do not do justice to 'more complex achievements' (p. 15). Despite this reservation, Lee (2010) concludes that Rogers' (1979) emphasis on the use of evidence in history teaching was seminal and a cornerstone of his theory around the frameworks of knowledge for making sense of the world and thinking historically. He concludes that it

> ... is a landmark in the development of a UK tradition of history education, a tradition which has now begun to influence school history around the world (p. 16).

Hawkey (2010) asserts that the influence of the Schools Council History project is still reflected in the core elements of British national history curricula since the 1990's and beyond. This is also evidenced, for example, in the Irish history curriculum of 1999, where traditional approaches have been replaced by a disciplinary-based programme of learning. In addition, the influence of Bruner's (1960) spiral approach is evident and reinterpreted by Rogers (1979), where progression and depth of learning are facilitated by revisiting history topics in an increasingly challenging manner as the child progresses in their understanding. However, such theory had to translate into classroom practice, in the methodology employed, as well as in planning. Thus, having defined the elements of the programme, emphasis thereafter was on what the practice should look like.

Some four decades later, Hawkey (2010) reminds us of the significant shift in current challenges and priorities that have a particular bearing on such implementation, listing the changing culture of schooling as a key determinant. She cautions about the centrality of learning targets and results-driven agenda in Britain (which has been directly avoided in the Irish history curriculum for a broader menu approach, as outlined in section 2.5). Likewise, she cites the omnipresent competing interests within the curriculum as being an agenda that needs to be addressed:

> Decisions about selections to be made in history are always contentious, but never more so than today where national identities rest on increasingly shaky ground in our post-modern, multi-ethnic, globalising world (p. 25)

Haydn (2010, p. 40) concurs, citing research into pupils' second-order concepts and curriculum development initiatives in history as largely overtaking much of Coltham and Fines theories, yet he underscores their influence on current curricula and the more sophisticated development of their ideas therein. Such developments in historical understanding are now examined, with particular reference to the relevance of temporal cognition to this process.

2.2.3: "At the heart of history is time" - The relevance of temporal cognition to historical understanding

While the primary focus of my thesis is on time and children's temporal understanding, in this section, I explore the relevance and contribution of children's temporal cognition to their broader historical understanding. It is important to stress that temporal cognition is one of many facets of historical understanding, and I have not set out to examine historical understanding in all its complexity. Thus, the focus here is ultimately on temporal ways of knowing and its significance and role in the development of historical understanding.

"History is the systematic study of the past, and at its heart is time" (Jordonova, 2000, p.

114).

In this quote, Jordanova points to the centrality of time in undertaking work in history as a study of the past. Wilchut (2010) concurs, stating that time is a crucial concept in developing historical understanding. Both writers agree that the fundamental work of a historian has to do with the passage of time. They cogently argue that the time element is what distinguishes history from other disciplines studying human culture and society. Fines (2011) asserts the undeniable link between time and history thus:

> History is about time, it subsists in time, time is the medium by which it happens. No-one can deny the importance of time in teaching history, yet it is probably the one element that causes more dispute than any other (p. 7).

Thornton and Vukelich (1988) explicate the relationship between learning time and learning history by stating that historical reasoning requires a temporal framework (p. 69). The writers examine a range of relevant literature and conclude that that "there is an interaction and contiguous development of children's understanding of time and history" (p. 78). De Groot-Reuvekamp et al. (2014) identify the basis for teaching about historical time as a core facet of learning in history. They claim that it facilitates pupils' understanding of historical events because it allows children to place such occurrences in time and it also facilitates children's wider understanding of the time context in which selected historical occurrences took place:

> By learning to understand historical time children develop historical consciousness, which implies the coherence between interpreting the past, understanding the present and the perspective on the future (p. 490).

The writers see an understanding of historical time as essential to the formation of the child's identity, as well as their understanding their place and contribution as citizens. They see such learning as involving a sense of objective time (chronology), as well as subjective time that is

personally experienced. Hodkinson (2011) emphasises the direct relationship between temporal cognition and historical understanding thus:

> "research now substantially demonstrates that an understanding of temporal concepts allows children to assimilate an organising structure for their historical knowledge (p. 6)".

This resonates with Cooper's (2010) assertion that historical understanding is important in constructing a sense of belonging in time and place (p. 219), while cautioning that

> "there is no single, unchanging, view of the past and children need, from an early age, to begin to understand why (p. 222).

Thornton and Vukelich (1988, p. 79) emphasise the importance of historical time in the development of historical reasoning, a perspective they term "the developmental historical time viewpoint". They posit that such cognition is dependent on the child's readiness and stage of cognitive development, as well as their prerequisite historical time language. Seixas (2004) provides an in-depth exploration of the concept of "historical consciousness" and explains it as a cognitive orientation, based on the human ability to think backwards and forwards in time from the present. Ahonen (2005), in his critique of Seixas' (2004) theory, points to the trans-generational nature of this process, where "time is regarded not only as a technical measure but a substance loaded with human-given meanings and moral issues" (p. 699). Thus, a developed understanding of historical time and historical understanding are important for citizenship.

Olafson's (1979) earlier theories also help elucidate the relevance of an understanding of historical time in developing an emerging historical understanding. He points to the interconnectedness of developing an understanding of time distinctions in the past, while relating it, and referencing it to the present:

"our system of temporal distinctions is deployed by beings who are themselves in time, and … this being the case, there must be at least one feature of our present state that cannot be described without reference to any preceding state" (Olafson, 1979, p. 79).

Elsewhere, he states that significant or lesser historical events are not a series of disconnected happenings, but temporal entities, which carry their pasts with them as habits, beliefs, rules, policies and continuing social relations.

"The past and present and future form a single domain of reference … within which the present has only a very qualified kind of priority" (Olafson, 1979, p. 97)

Hodkinson (2011) provides an interesting visual interpretation of the relationship, thus:

If history is a vast cloakroom of knowledge, with the coats being historical periods, then the coat pegs represent historical time. Without the pegs the coats become a confusing mass and extracting any one coat for examination, becomes difficult if not impossible (p. 20)

Lee (1984), in arguing the importance of historical learning and understanding, distinguishes between "the past, historicity, and history" (p. 1), asserting that there is no escape from a sense of time in the past, since it is intrinsically linked with the concepts we embrace and use to cope with our modern, everyday physical and social worlds. Rogers (1984) concurs, stating that we cannot escape the past because we are endowed with memory:

"We cannot have a perception of the present that is not strongly influenced by a version of the past … which we have internalised in the course of growing up, and articulated in our adult lives. Such versions vary and *matter* because they determine how we understand and behave towards events that occur in our present world" (p. 29).

Rogers (1984) points to the inherent time-related challenge in developing historical understanding, given that the learning involved is, as Lee (1984) explains, "vicarious - in an obvious way, it is second-hand" (p. 12). This vicarious experience is seen by Lee as liberating: "It can extend our conception of what 'man' is, by showing us what he has done,

thought, and been, and how he has changed (p. 13). Both Rogers (1984) and Lee (1984) independently utilise the term "backward referencing" to describe the process of engagement for the learner with the past, where s/he comes to know and understand why people did as they did, how historical individuals, societies, nations, political parties and institutions have influenced our world, and how their traditions and policies emerged and developed.

For Lee (1984), the emergence of historical understanding emanates from understanding reasons and gaining insight into, and perspective from, other rational points of view. It involves a readiness and ability on the part of the learner to entertain and accommodate historical beliefs and values that are not necessarily found acceptable in the present time, or shared as common beliefs for the purposes of understanding. Central to this tenet is an underlying critical engagement by the learner with the historical content, where a historical tolerance must be informed and judicious.

Rogers (1984) emphasises the key role of the history teacher in this process:

> "to provide a continuously stretching treatment of content identified as crucial, such that understanding is constantly deepened into wider and more sophisticated frames of reference" (p. 30).

Rogers (1984) points to the importance not alone of the conceptual, but also the contextual in building such frames of reference. Thus, in creating an effective learning environment, a complete historical record of a period is explored, due credence is given to the context, as well as the process by which the subject matter can be developed. Historical understanding is facilitated with recognition of the context of the mores, accepted practices and assumptions of the time and society to which a study relates, and an understanding of this perspective is essential. Reminiscent of Sfard's (1998) theories regarding the acquisition and participation

metaphors of learning, as outlined in section 2.1 above, he points to the fact that such a conceptual and contextual framework is not "given by" (p. 31) the mores of the time, but rather "constructed from" (p. 31) them. He cautions, however, that creating and establishing a context that facilitates deeper understanding of the past is not always clear-cut, as the focus may be on the provision of particular details, times, dates and events, which may not necessarily build into such a unified context. Thus for the learner, it may be necessary to draw inferences, and reason about gaps in the knowledge in order to construct a sense of the reality of the day. For the young learner, this may be very strange and jar with the child's modern experience of living, a point acknowledged in the Teacher Guidelines of the Irish Primary History curriculum: "we should view history as an attempt to reconstruct and interpret the past, rather than the past itself" (p. 2).

Barton (2001) cautions that the role and value of historical understanding can vary dramatically in different settings, and that these variations are intrinsically linked with a range of cultural, political and social influences:

> In order to understand historical thinking more fully, researchers must situate perspectives on the past within the social and cultural contexts in which they arise. In most fields of learning, educators are well aware of the importance of context (p. 90).

He points to the central roles of the school, the family and media in children's understanding and engagement with historical time. He highlights the value of family conversations in facilitating children's connections with the past and he examines the active interest children display in deepening and extending their knowledge about the past through questioning and discussion. Interestingly, his study elucidated the sense his young respondents had of actively carrying on the role of transmitting historical information about the past when they reached adulthood. Further, it points to a clear role of historical understanding in shaping

children's personal and cultural identities: it becomes 'a means of defining who they are and of their place in a larger community' (p.101).

His cross-cultural work in Northern Ireland and the USA (2001) provides valuable insights into the variations that can occur in children's historical understanding from one geographical setting to another, given the different background experiences and contexts in which children experience the world. His work contributes significantly to the conversation about different children's experiences. VanSledright (1997) similarly posits that the historical 'position' of the learner must be accommodated and appreciated by both researchers and teachers in facilitating learning that makes use of what Wertsch (1998) terms their 'cultural tools'.

Similarly, Levstik and Barton (1996) examined the relevance of social context on children's historical thinking, asserting that

> To understand how people think and learn … one must understand the social, cultural and historical basis of that thought. Rather than attempting to examine an individual's privately constructed meaning, one must look to the way in which social interaction, structural and cultural processes, and historical heritages shape meaning (p. 533).

The writers point to the drawbacks of ignoring the situated nature of knowledge and they challenge the notion that students' historical reasoning is markedly inferior to historians. They identify the limitations of earlier approaches to historical understanding that prevailed, which assumed that children should either learn the content of commonly accepted history curricula, or should emulate the practices of historians. They claim that neither approach fully captures the historical thinking or understanding of students. Their distinction between the content (the message/information to be learned), symbolic form (the form of the content as it is presented) and the context provides a more nuanced approach to thinking about historical learning. They point to the collaborative nature of engaging with any medium that

offers information about the past, from which meaning can then be constructed and facilitated, a process they term "associative linkage" (p. 537), involving connecting images, words and events to more familiar patterns. This can involve "intertexts" (p. 555) or interconnections between what is selected as clues by the learner, what is read or what is seen as sources of information. Their study underscores the value of family stories and material culture, especially in the younger cohort studied (up to fourth grade) – site visits, conversations around artefacts, etc. in making historical knowledge accessible. Such theories have key implications for pedagogy.

Significantly, Booth (1993) argues that historical thinking requires "adductive thought" (p. 114), a process he explains as involving the learner in both inductive and deductive cognition. Fischer (1970) described the inductive process as an experimental testing of a theory, while the deductive process involves forming an explanatory hypothesis. Booth (1993) demonstrated that younger children were capable of successful historical thinking, provided that teachers facilitated this process through open-ended discussion formats that allow personal connections to be made. This theory refutes Hallam's (1979) assertion (to be explored in section 2.3.6 below) that disciplined historical reasoning did not develop until students were in their mid-teens.

Brophy and VanSledright (1997) identify three different perspectives that have key influence on decisions about the approach to historical understanding in the curriculum: the child development, social studies and disciplinary historical perspectives. While the first view advocates that history teaching must be developmentally appropriate for children, the second prioritises civic participation and engagement in civic activities as the reason for social education, with history being an element of this effort. The third reflects the view of many

disciplinary historians, who favour an emphasis on historical subject matter and who see social studies as undermining the integrity of the discipline with its "intellectually fluffy, bankrupt course of study" (p. 5).

The writers conclude that children have a sense of historical knowing and bring conceptions of the past to bear on new learning that they acquire. However, they point to the difficulty young learners have in engaging with what is learned if it is not synthesised with prior knowledge. Thus, it will lack coherence if it is not situated within a context. In this regard, the writers point to the limitations of what they term the factual approach to history teaching (i.e. solely or over reliant on a first order concept approach), arguing that it denies children opportunities for critical interpretation and synthetic thinking, facets of historical understanding they deem crucial. VanSledright (1995) advocates a three-point approach to the scaffolding of children's historical learning and development of historical frameworks. He points to the value of allowing young learners construct rationales for the learning, while assessing their prior knowledge on any given topic. He sees their active engagement in historical investigations as crucial to their development of historical schemas. Foster and Padgett (1999, p. 357) make a cogent argument for supporting this approach, encouraging educators to go beyond transmission learning models and engage children in deeper historical investigations. The writers see the value of such enquiry as allowing children to ask more searching questions, to engage with historical evidence, examine different view-points, leading to some logical conclusions, even if they have to be reconsidered subsequently. This echoes the work of Bransford and Donavan (2005) who assert the centrality of utilising cultural experience in laying foundations for learning in history, even at a very young age. They claim that participation in cultural experience and social practice, from pre-school age,

provides the structure and interpretation of the culture's norms and rules, and these processes provide the basis for making connections with the past.

This theory resonates with Hallden's (1994) work with Swedish children who identified how they successfully bring their own ideas of the past to the interpretative process. Yet, he cautioned about the "paradox of understanding history" (p. 27) which can arise when novice learners produce naive, simplistic conceptions of the past. He claims that this can occur when they approach history by personifying explanations; that is, they focus narrowly on actions and intentions of individuals. He emphasises the need for the learner to simultaneously process a meta-level explanation, comprising the broader structure and context, as well as its lower-order facts and concepts. For Hallden (1994), this facilitates a deeper, more meaningful approach for the learner.

Consideration of the central, mediating role of texts and the narrative format in providing such a meta-level introduction into the past is pertinent here, given a review of Irish history texts that is undertaken in chapter 3 of this work. Levstik (1986) points to the importance of students experiencing a wider variety of resources other than mere textbooks in accessing historical information. She points to the value of integrating language arts with historical studies as a means of creating opportunities for the interpretation and creation of narratives. Levstik and Pappas (1992) make a cogent argument for utilising narrative text when selecting instructional methods in teaching history to younger children. They point out that such texts are appealing to children, but are also basic to the culture of history as a discipline. Brophy and VanSledright (1997) concur, seeing the narrative format as giving shape to historical events, with some being more significance than others, while embedding them within a causal interpretation:

Historians transform a collection of facts into a sequence of events – a story – that includes interpretation of the causes that account for these events (p. 17).

However, the writers caution that the teacher needs to be cognisant of the different purposes for which texts are written. Richgels, Tomlinson and Tunnel (1993) conducted an interesting enquiry into the differences and similarities in text between what they term "trade books" (fiction/literature) and expository textbooks. They concluded that trade books were more explanatory and had a more comprehensive level of detail than the textbooks they studied. This view is reflected in the related theories of McKinney and Jones (1993) who concluded that a combined use of trade books and textbooks led to additional historical information being presented over textbooks alone. Levstik (1986) cautioned about the need for teachers to draw a clear distinction between historical accounts and fictional recreations that may, or may not, be historically accurate.

2.2.4: Navigating the tension between "the familiar and the strange"

Bransford et al. (2000) examine the theory of 'what successful learning looks like' (p. 31) and provide a thought-provoking distinction between developing expertise in an area, as opposed to novice-like learning, or what they colourfully term being an 'artisan' versus a 'virtuoso' (p. 45). They argue that developing expertise in any area of learning involves 'a deep understanding of the subject matter' (p. 31), while also possessing 'varying levels of flexibility in their approach to new situations' (p. 31). Applied to historical learning, a deep and flexible approach is required, involving a depth of understanding of a topic, but also the learner's ability to adapt their skills and transfer the learning in new situations.

However, the exacting nature of such a process is described by the eminent psychologist and arguably one of the most influential thinkers and researchers on historical understanding, Wineburg (2001) as equating to 'other unnatural acts' (p. 488). He asserts that

> 'historical thinking, in its deepest forms, is neither a natural process nor something that springs automatically from psychological development (p. 491).

He provides a number of captivating, well-developed case studies and vignettes which offer valuable insights in considering the precise nature of coming to deep and flexible historical cognition, as well as comprehensively documenting the challenges faced in facilitating this process. His basic tenet has particular relevance for the young learner. He posits that the learner can only conceptualise the past by successfully navigating the tension between "the familiar and the strange" (p. 3), and this tension underlies every intellectual interaction with the story of the past. It emanates from the divergence between what is known and experienced by the learner, and what is unknown and not experienced, between feelings of being connected or disconnected from what is being learned. He advocates an approach to history teaching that addresses topics that "… jar with their strangeness" (p. 3), and he contrasts this dynamic with an approach to history teaching that merely provides "… a faded version of the past" (p. 15). Crucially for this study, he argues that enabling the learner to think historically involves providing an appropriate context for the past, while ensuring that the learner is not borrowing a context from their contemporary social world. He uses the term "presentism" (p. 17) to describe the act of seeing the past through the eyes of the present, and states that

> … it is not some bad habit we have fallen into. It is, instead, our psychological condition at rest, a way of thinking that requires little effort and comes quite naturally.

One case study of Wineburg's (2001) led him to conclude that information about the past is not "put" or "placed" in context like pieces of a puzzle. This theory is reminiscent of Sfard's

(1998) earlier distinction between *acquisition* and *participation* metaphors of constructivist learning (section 2.1 above) and Rogers (1979) distinction between conceptual and contextual frameworks of learning (section 2.2.2 above). He emphasises that contexts are not "located" or "found", rather the provision of a meaningful context for such learning involves an active process of connecting things in a pattern. Specifically, this enables the learner to "… dwell in the space between his present knowledge and the circumstances of the past" (p. 19), in a creative space which will "… help generate a road map to guide his future learning" (p. 20). Echoing the constructivist beliefs of Gopnik (2001, section 1.1 above), he concludes that deep and flexible historical cognition is an act that engages the heart, involving an affective personal encounter with the past and learning from it. Thus, achieving mature historical thought depends precisely on the ability of the learner to

> … navigate the uneven landscape of history, to traverse the rugged terrain that lies beneath the poles of familiarity and distance from the past (p. 3).

Interestingly, echoing Hallden's (1994) assertions about the paradox of understanding history (section 2.2.2 above), he cautions that the pole of familiarity pulls more forcefully, and the learner is enticed into the familiar with the promise that it is easier to locate oneself in the continuum of time and to solidify one's identity in the present. This is enabled by tying one's own personal stories to those who have come before us. He contends that when this connection happens, the past becomes a more meaningful resource in our everyday life. Conversely, he outlines the limitation of attempting to come to know people in the past by relying on the limited dimensions of our own lived experience, and he argues convincingly on the demerits of attempting to perceive the experiences of others.

He utilises a poignant excerpt from the writings of the Italian Chemist, Primo Levi (1987) to demonstrate this, citing his experiences of relating his story of captivity in a German concentration camp to fifth graders in an American school.

> An alert looking boy, apparently at the head of the class, asked me the obligatory question: But how come you didn't escape? ... He asked me to draw a sketch of the camp on the blackboard, indicating the location of the watch towers, the gates, the barbed wire, and the power station. I did my best, watched by thirty pairs of intent eyes. My interlocutor studied the drawings for a few instances, asked me for a few further clarifications, then he presented to me the plan he had worked out: here, at night, cut the throat of the sentinel; then, put on his clothes; immediately after this run over there and cut off the electricity so the searchlights would go out and the high tension fence would be deactivated. After that I could leave without any trouble. He added seriously: "If it should happen to you again, do as I told you. You'll see that you'll be able to do it" (p. 21).

Several important ideas emanate from Wineburg's (2001) studies that expose some of the persistent challenges in teaching for historical understanding. Hays (2001), in her critique of Wineburg's (2001) work, cites one such challenge that is of particular relevance to my study:

> … it is clear that history is an extremely difficult topic because no one can enter into it completely. It is always filtered by our own "time" and our natural bias, no matter how we try to immerse ourselves in the milieu we are studying (p. 162).

Wineburg points out another time-related challenge for the learner, stating that it is extremely difficult to engage students in the study of history, because they do not see its immediate meaning in the present. He explains the importance of the individual's perspective on time, in that people who see last month as the distant past, don't easily connect to events from a generation or more ago. A third significant challenge he identifies relates to history textbooks, which he describes as selective in the content they provide. Hays (2001) concurs, stating that the "user-friendly" format adopted by writers of such textual materials presents information about the past as though "…spoken by the oracle" (p. 162).

Thus, a number of significant challenges have been identified by Wineburg (2001) which are unique to history teaching. The young child has a very limited experience of the past, so accordingly, connecting with it in a meaningful way will be limited to what is familiar in terms of what the child has personally experienced or encountered as information from another source. Implicitly, the child's pre-existing experiences at a social and cultural level will significantly determine the nature and extent of the connections to be made. The child's natural tendency to live in the "here-and-now" is in contrast to the requirement to connect with something in the past which may, or may not, be interesting. The version of the past that is presented may hold little relevance, especially if it presented in a manner which does not engage the child, thus having in Wineburg's words (2005), 'the vitality of sawdust' (p. 2). Such challenges expose the exacting nature of ensuring that every child's individual connection with the past is acknowledged, valued and facilitated at a classroom level. However, Thornton and Vukelich (1988, p. 79) provide an interesting claim that, while complex, history poses no greater challenge for the learner than aspects of the mathematics or literature curriculum, such as algebra or trigonometry.

2.2.5: Prerequisite second-order concepts in the development of historical understanding

While my thesis focusses primarily on temporal cognition as temporal ways of knowing, I now examine its connection with, and relevance to, four additional second-order historical concepts that contribute significantly to the process of developing historical understanding: using historical evidence, understanding the relationship between cause and effect, change and continuity, and developing imagination and empathy.

Cooper (2010) provides a nuanced explanation of the relationship between temporal and chronological awareness, second-order concepts and their relevance to historical understanding:

> Chronology is …a complex concept. It derives from Greek, meaning the study of time; it does not just mean the ability to recite dates or put them correctly on a time line. It also involves understanding the causes and effects of changes, duration, slow changes and rapid changes, similarities and differences within and between periods, the key events and the ethos of periods, concurrent changes in different societies or in aspects of a society (p. 13).

In the teaching and learning of historical time, De Groot-Reuvekamp et al. (2014) highlight the role of key historical concepts, in addition to the combined development of objective and subjective time frameworks. Lee and Shemilt (2003) distinguish between first-order and second-order concepts which are fundamental to the development of children's historical knowledge and understanding. While the former is understood as mastery of the basic, substantive content to be taught, the latter relates to mastery of a number of the key concepts that are deemed fundamental to children's capacity to make meaningful sense of the stories and learning that we teach them about the past. These will be further discussed in relation to the Irish primary curriculum shortly. Dickinson and Lee (1994), in their early phase of work on *Project Chata* (Concepts of History and Teaching Approaches: 7 to 14) distinguish between children's ideas about what history is and what it involves, described by Peck and Seixas (2008) as the first-order, 'substantive concepts, like *revolution*, *president,* and *nation*' (p. 1021). The second-order concepts are deemed by Dickinson and Lee (1994) to be "the key to progression" (p. 1) and 'provide the tools for doing history, for thinking historically' (Peck and Seixas, 2008, p. 1021). Den Heyer (2011) describes such second-order concepts as the disciplinary interpretation or "procedures" of historical thinking. According to Lévesque (2011), students must be able to use both sets of knowledge, as both content and skills are required to employ historical thinking.

2.2.5.1: Using historical evidence

The rationale for encouraging an evidence-based approach to school history is cogently outlined by Thompson (1984) who asserts that "we can only come to know the past as a result of historical enquiry", a process he sees as fundamental to the child's ability to understanding and respond to any historical situation. He sees this as being best achieved by "pupils making extensive, guided, thoughtful and increasingly demanding use of sources of history as evidence" (p. 169). Lee (1984) is also a proponent of evidence-based historical enquiry. He considers the acquisition and application of 'rational passions' (p. 5) to be central to this process, involving both a concern for the truth and the adoption of an objective approach to the operation of historical procedure. He establishes this as one of the primary reasons for learning history, as well as being a fundamental part of what learning history actually entails. Essentially, this points to a distinction between substantive and procedural knowledge in learning history.

VanSledright (2002) addresses the need to confront what he terms 'History's Interpretive Paradox' or what he later terms 'the thin ice of historical interpretation' (p. 1102), so as to avoid children accepting, without question, historical accounts of the past. Rogers (1984) points to the value of working directly from historical records in history teaching so that the "accuracy and adequacy" (p. 21) of the views they present can form the basis of examination. Likewise, he points to the need for such enquiry to address the "aptness and relevance" (p. 21) of the core ideas that they offer. These ideas form the basic frame of reference, within which current events can be given a perspective and understood. Levstik and Barton (2014) assert that 'history, then, is not just opinion: it is interpretation grounded in evidence' (p. 193).

Lee (1984) points to the key role of history in understanding a practical present, with a deeper knowledge of its background, origins and development. Rogers (1984) concurs, asserting that "a version of the past – some sort of version – has already affected every child by the time he enters school" (p. 21) and he argues that in the absence of historical education, there is a danger that the child's developing framework of the world will not be adequately overseen. So, while two opposing views of a situation may be presented, their conflicting assertions can only be appraised critically by a person with adequate historical knowledge. In its absence, Rogers (1984) cautions that we may be reduced to "outraged rejection or gullible acceptance" of historical events. He points to the need for well-founded, valid historical knowledge, which emanates from a refined process of utilising techniques and procedures for identifying and handling historical evidence.). Lee (2000) examined data derived from *Project Chata* which looked at 7 to 14 year olds' ability to examine historical claims. The research suggests that this age-group "treat all historical claims as if they were matters to be directly tested by finding and compiling information" (p. 26). The *Chata* project team concluded that children's ability to interpret accounts was inevitably linked with their perspective. They further conclude that children "know that the significance of events or processes is not fixed, but changes with the theme and timescale of the account" (p. 40). Levstik and Barton (2014) point to the role of history in understanding the motivations that influence past decisions: "this helps us to see history not as inevitable, but as subjects to human reason, and to see the study of history as a way to apply reason to contemporary problems" (p. 153).

2.2.5.2: Understanding change and continuity

Thompson (1984) argues the rationale for historical study which engages the learner in an examination of the changes and developments in human affairs over time, an approach he identifies as one of the more distinctive elements that historical learning has to offer. Crucially, he sees the process of developing a conceptual understanding of change and continuity as operating at a higher level of generality, with concomitant challenges for pedagogy and practice, as distinct from a more general, mundane analysis of particular events. To be intelligible, this "must involve the identification and examination of causal connections between events and actions" (p. 178), engaging the learner in judgements, discussions and analysis of particular evidence and information, leading to what Shemilt (1984) describes as pupils being afforded opportunities to work out their own ideas and thinking. Essentially, this manifests itself in children coming to understand the analysed information and explanations relating to a particular historical event. Thompson distinguishes between a classroom examination of the particular and immediate factors that led to any historical event, as opposed to the time-distanced perspective of a historian or a history teacher, in coming to an emergence of the underlying causal framework. He points to the necessity for teachers to recognise the importance of engaging children in learning opportunities where causal relationships can be discussed, teased out and expressed, so that higher levels of thinking can be achieved. This theory reflects the constructivist theories outlined in section 1.1 above.

2.2.5.3: Cause and effect and historical understanding

The second-order concept of cause and consequence/effect is summarised by Shemilt (1984) as involving action (what people do) and event (what happens in the world). Clearly, its study relies on the prerequisite skill of chronology and time sequencing. The core principle is that every historical event has an underlying cause, or more than one, and this has consequences or effects. Seixas and Morton (2013) explain the process as involving the learner in asking why an event happens, as well as determining its outcome. They assert that causation enquiry in history is essential if children are to make sense of the past. They identify a number of key progressive elements in the process. Firstly, an understanding is required of different, even multiple causes that can affect the consequences and give rise to change. Secondly, an understanding is required of the varying levels of influence of different causes, essentially meaning that the child can distinguish between causes that were more important and influential than others in bringing about an outcome. Thirdly, reminiscent of Rogers theory (1979, section 2.2.2 above) regarding the influence the cultural mores of the time, the social, political and economic conditions of the time matter, as do the actions of the historical protagonists. Fourthly, there may be outcomes that were not envisaged by the historical actors and these may be influential, albeit unintentionally, in bringing about change. Dickinson and Lee's work on *Project Chata* (1994) establishes that the development of such "rational understanding" (p. 41) is central to understanding past events and involves outlining what historical actors were seeking to do, why they were doing it, and how historical agents saw the situation, given their particular context or circumstances.

2.2.5.4: The role of imagination and empathy in the development of historical understanding

Dickinson and Lee (1984) assert that historical imagination and empathy are central and prerequisite features of historical understanding, involving an ability to put oneself in someone else's shoes and view the world from the situation of another person. They claim that these skills and concepts develop incrementally and are influenced by the teacher's ability to connect the period of study to the child's life, through discussion and questioning. Shemilt (1984) points to the key challenge implicit in creating 'empathetic reconstruction' or re-enactment in the classroom of what he beautifully defines as "the divine wind that breathes life into the dry bones of the past, turns dust to flesh, and inspires pupils to commune with their predecessors" (p. 39). He conducted extensive work on students' ability to empathise with people from the past. He demonstrated that young learners were able to imagine past events in ways that facilitated historical empathy, even when they were still in the concrete operational stage. He concluded that the methodological approach adopted by the teacher is crucial in enabling children's <u>direct</u> involvement in thinking historically. He also emphasises the potential of the types of sources of historical information that are at children's disposal as key in their development of historical thinking. He cautions against the difficulty of "empathy savouring profundity", without demanding much thought or rational analysis. He claims that history can only offer academically respectable explanations of the past and claim the status of a discipline if it is grounded in an evidence-based methodology and offers causal as well as empathetic explanations. This brings coherence to the construction of the past, which emanates from a conviction inspired by empathetic construction. Dickinson and Lee's (1994) distinction in the Chata Project between "everyday empathy", "restricted historical empathy" and "contextual historical empathy" (pp. 43 - 44) is relevant here: they posit that while children see a reason for empathising with people in the past, they may link this

understanding with their own personal, individual experience or perspective. They consider the development of restricted historical empathy to be a more effective strategy, involving greater ability to view historical actors' actions from the wider perspective of the context and situation in which they found themselves. Contextual historical empathy is seen by the writers as an ability to differentiate between the conditions and practices of the time, as distinct from those of the present day.

Ashby and Lee (1987) delineated five stages in the development by the young child of a sense of empathy, moving from the initial stage where very limited empathy with past events or people was evident. This progressed to more general, stereotypical images and led to an ability to understand the past by comparing and contrasting it with their own present. At the fourth level, some further differentiation was evident, with the children able to distinguish between past events as different from what they had experienced. This principle progressed to being further generalised, where children grew in their appreciation of the differences between past and present experiences. At this level, children displayed an ability to apply learning in one context more widely. The writers conclude that the methodological approach that best facilitates such progression through the stages is one where children are presented with conflicting views of the past which they must explore and engage with, so as to tease out different perspectives.

It is worth noting the vitally important role of the second-order concept of empathy in the development of temporal ways of knowing. Central to its development is the ability of the child to take on board, at an intuitive and empathetic level, another person's understanding or perspective of a story of the past. This reflects the constructivist view that temporal knowing

is not an interjection, rather a reconstruction. It raises fundamental questions about how such a process can be facilitated, especially for the young child.

2.2.6: A changed understanding of children's temporal cognition and its implications for curriculum and pedagogy

The contemporary research into children's historical understanding generally, and temporal cognition specifically, as outlined in sections 2.2.2, 2.2.3, 2.2.4 and 2.2.5 above, has resulted in a marked change in how children's temporal ways of knowing should be understood and catered for at the level of curriculum and pedagogy. The growing acceptance that children are cognitively capable of developing time-related concepts from a very young age has been outlined (Thornton and Vukelich (1988); De Groot-Reuvekamp et al., 2014; Haydn, 2010; Lee, 1984; Levesque, 1986; Levstik,1986), provided that opportunities are facilitated to scaffold their learning and link the stories of the past with personal experiences. Barton (2011) states this position succinctly: "there is no reason to avoid history because of a perceived 'inability' of young children to understand historical time" (p. 17).

While acknowledging that children are temporally aware, even from a very young age, Hoodless (2011) elucidates the challenges that are inherent in developing temporal cognition:

> "What they undoubtedly find difficult to master … is the *measurement* of time passing. They struggle with both the number concepts associated with this, as well as the language they need to express their understanding of it" (p. 21).

Her earlier arguments (2002) still hold weight for a greater appreciation of the modern influences on children's understanding of time that are due to their changed life experiences, especially their access to a wide variety of information sources. Gopnik et al. concur, authoritatively arguing (2001) that contemporary children's level of awareness of their world

is vastly different to that reflected in the experiences of, for example, Piaget's subjects, as outlined in section 2.3 below) over 70 years ago. Both writers call for recognition of influences on children's learning such as increased travel, as well as ever-developing information and communication technologies that can allow access to endless sources of information on a potentially unlimited basis.

As a consequence of this recent research, there is an acceptance that children are capable of connecting with stories of the past, both at a cognitive and sociocultural level, within and outside of schools. A basic prerequisite is the creation of appropriate learning experiences, with its concomitant challenges for curriculum and pedagogy. In practice, this position is validated by and reflected in the curriculum requirements of the primary history curriculum in Ireland (DES, 1999) and the NC for History in England (DfEE/QCA, 1999). The provision in both curricula for the development of temporal ways of knowing is examined below in section 2.5 of the study.

2.2.7: Conclusion

The developments in history education in recent decades, as charted, point to the significant shift in emphasis in how historical learning is approached, in the endeavour to lead to deeper and flexible understanding. Conceptualising temporality as a prerequisite second-order concept, the study recognises the essential role of both first-order and additional second-order concepts in historical understanding. In addition to time and chronology, these include using historical evidence, understanding the relationship between cause and effect, change and continuity, and developing imagination and empathy. The study argues for due recognition to be given to temporality, in the belief that both sets of knowledge, the content and skills, are required to develop historical thinking (Lévesque, 2011).

Now, the study examines literature that charts the prevalent cognitive-developmental theories which influenced approaches to temporality in the curriculum.

2.3: The cognitive-developmental view of children's temporal cognition
2.3.0: Introduction

In this section, a review is undertaken of an extensive collection of literature relating to the constructive processes required by children for the development of time concepts. The review makes explicit the historical dominance of these theories over appreciation of the sociocultural influences on temporal cognition. To begin, the renowned, pioneering work of Piaget (1954) regarding children's conceptual understanding of time, warrants discussion. Piagetian-inspired insights on temporal ways of knowing are important for this study as they emphasise the constructive and developmental dimensions of temporal understanding.

2.3.1: Piaget and the child's conception of time

Drawing on a theory first espoused by Baldwin (1896), Piaget (1954) charted the development of four different types of structures that take place, with age, in the young child. These were understood to build on each other in a progressive manner. In essence, this demonstrates a progression for the child through four stages, with each stage being a prerequisite for another: from the sensory-motor stage (approximately from birth to aged 2) to the pre-operational stage (approximately aged 2 to 7 years), where intellectual structures change and alter to become successively "intuitive", "logical" and "formal" in nature. This is followed by the concrete operational stage (aged 7 to 12 years), where the child can engage in logical and deductive thought, based on what is represented in a concrete manner to them. At the fourth stage, the child reaches the formal operations stage. Piaget acknowledged the

importance and universal nature of the young child's interaction with their social and physical worlds in coming to such understanding, and the internal cognitive response that emanated from this led to the "guided discovery" approach that he advocated in education.

 Specifically, Piaget's extensive study (1969) of children's construction of time concepts led him to comparisons with the construction of space concepts, and to a conclusion that a close relationship existed between the two entities. He pointed to the child's inability at the early stage to comprehend differences between the two areas, yet an ability to understand a sequence of events in the course of a particular action. So, for example, a child of the sensorimotor period who is looking for something she has lost will explore different rooms of her home in a particular order. This is evidence of her mastery of the concept of "space-in-action", but it could be argued that it is also evidence of her mastery of the concept of "time-in-action" (p. 547). Piaget concludes that she can order her displacements in time as well as in space. Later, at around the sixth stage of the construction of reality, the child shows that she is capable of planning her actions, and this involves representing her time-related displacements in a more or less systematic way. He contends that these behaviour patterns anticipate the construction of time concepts. He identifies a key challenge for the young child which relates to his/her ability to order, in the correct sequence, a series of pictures which represent different phases in an event. Initially, he observed that the child will demonstrate that they are capable only of ordering pairs of pictures, but later they gain an ability and the co-ordination to be able to arrange pictures, so as to depict a longer series of the events.

A further challenge to be considered is the child's capacity to accurately distinguish duration from space, and space from speed and motion. Initially, Piaget (1969) observed that the child

will merge these notions in their thinking, but will later begin to understand the succession of perceptible events.

Gruber and Voneche (1977) set out to interpret the work of Piaget. They outlined 3 processes that have direct application to the related work undertaken with children in a classroom context:

1.   The child's elementary operations: time and motion;

2.   The child and the sequencing of events;

3.   The child and the succession of perceptible events.

These processes are now examined.

2.3.2: The child's elementary operations: time and motion

Gruber and Voneche (1977) contend that, for Piaget (1969), the concepts of time and space form an inseparable whole. They examine his claim that time is the operational co-ordination of motions, and it is necessary for the child to construct, one by one, the relations between simultaneity, succession and duration. He defines memory as "a reconstruction of the past" (p. 551), involving a "narrative" and he asserts that this applies at the sensorimotor level for the child.   He explains that this will involve causality; if one memory is earlier than another, the former is linked to the latter, in order of succession.

2.3.3: The child and the sequencing of events

Gruber and Voneche (1977) state that Piaget (1969) began his analysis of children's conception of time with an examination of the way in which they link two events into a

simple, causal chain. They outline his study which involved children aged 6 to 8 years, and his method involved showing a series of pictures to children of a body falling to the ground, from a standing position. The children were asked to sequence the pictures in the correct order. He concluded that before the age of 7 or 8, the child is not capable of reasoning about several possibilities at the same time. They lack the power of what is termed "operational reversibility", that being an ability to place the pictures in the correct sequence to show the body falling to the ground, while also being able to reverse the motion, showing the body moving in reverse order, from ground to standing position. This ability to understand the reverse operation or motion is seen by Piaget as a basic prerequisite to the selection of various possible orders and, to him, it is not visible up to the age of 8 years. However, the children aged 8 years and over in the study demonstrated a clear ability to reconstruct the true and irreversible order of events.

2.3.4: The child and the succession of perceptible events

Gruber and Voneche (1977) examine Piaget's study (1969) which is extended to test the child's ability to differentiate between succession, duration and distance. Using a series of rather tedious experiments with two snails moving along parallel lines at different intervals, children initially demonstrated an inability to understand the nuances of language, such as "the second snail took <u>longer</u> to get to the end" being equated to "the second snail had <u>further</u> to travel to get to the end". Thus, there is evidence that the child is confusing temporal and spatial successions; it may also be argued that the adult is taking the vocabulary at the child's disposal too literally. At a second stage, the study observed a slow maturation of the child's ability to differentiate and articulate differences, and an understanding of the terms "before" and "after" becomes evident, both in the spatial sense and in the temporal sense. At a third stage, aged 7-11 years, the child demonstrates a crucial ability to refine their understanding

further, and differentiate between the concept of time, space and velocity, a point attributed to their improved ability for mental reversibility. At this point, the child is equipped to find logical solutions to concrete problems.

2.3.5: The child's concept of age

Gruber and Voneche (1977) examined Piaget's significant and comprehensive analysis of children's ideas of age, and they pose three key questions that the research highlights:

1. Does the child look upon ageing as a continuous process in time?

2. Is this time the same for all individuals?

3. Does the child associate differences with the order of births?

They identified a number of systematic difficulties that children experience when developing a concept of age, and they distinguish three stages in the development of this conception. They conclude that up to the age of 8, there is evidence of an inability to grasp the ideas of succession and duration operationally, and the child's language is marked by egocentric evaluations of the facts. I utilise a series of personally collected vignettes here to illustrate their theories. During the first, age is independent of the order of birth (Vignette 4: "John was born first before me, but I am older, because I am taller" – child aged 5 years). During the second stage, the child believes that age differences are not maintained throughout our life and depend on the order of our birth (Vignette 5: "Who is the older person in the picture, the father or grandfather? They are both the same. They are the same height" – child aged 6 years). During the third stage, there is evidence that duration and succession have become co-ordinated and this signals a conservation of the notion of age difference (Vignette 6: "I am 7 years older that my new baby brother, I will still be seven years older than him when he is ten" – child aged 7).

Gruber and Voneche (1977) highlight Piaget's assertions that clear parallels can be drawn between the development of children's concepts of age and their concept of physical time, and their study shows clear similarities about the stages of progression leading to full acquisition of both concepts.

2.3.6: Piaget's theories – a polemical position

Booth (1993) describes the application of Piagetian theory in the context of historical understanding as reflecting a hierarchical approach or an "invariant hierarchy" (p. 113). In his investigation of the nature of children's historical thinking, he examines the credence given by researchers such as Hallam (1973) into the Piagetian framework and developmental milestones of cognition. Further, Egan (1982) charts the influence of Piagetian theories on the teaching of history and on the belief that students do not develop some of the basic historical concepts until adolescence, and that attempts to teach history to young children not appropriate. He points out that early in the century, the dominant theories of cognitive development stressed that immediate experiences controlled children's thinking during their early years; only gradually did their horizons expand. Egan (1982) explains that social studies teachers almost universally adopted this model in the form of what Hallam (1969, 1979) referred to as the "expanding horizons" curriculum and he concludes that by mid-century, Piaget's work had given even greater support to the belief that children can grasp history only late in their development.

However, while Piaget's theory was highly acclaimed in American schools in the latter half of the 20th century and it was very influential in curriculum design, with scores of books and papers addressing the application of his theory to education (Elkind, 1976; Dickinson and

Lee, 1978), strong and sustained criticisms of his theory began to emerge in North America, and stage theories of development began to fall out of favour. Booth (1993) outlines how it came under attack. A primary concern was that it was based too much on logic, to the detriment of the affective and the social, and it adopted an over rational definition of thinking. He argues that the methodology accruing from this approach would inevitably be flawed. Booth (1993) claimed that the Piagetian developmental model is "… particularly inappropriate for measuring *historical* thinking" (p. 11). He explains his premise by quoting from Fischer (1971) thus:

> 'the logic of historical thought… consists neither of inductive reasoning from the particular, nor deductive reasoning from the general to the particular. Instead, it is a process of adductive reasoning in the simple sense of adducing answers to specific questions, so that a satisfactory 'fit' is obtained. … History is, in short, a problem solving discipline. A historian is someone (anyone) who asks an open-ended question about past events and answers it with selected facts arranged in the form of an explanatory paradigm (p. 15).

Booth (1993) claimed that a second challenge to his theory centred on the belief that children's historical cognition is acquired by processes that are solely internal in nature, with no apparent external cause or influence. A third criticism related to his approach to methodology. Hopkins (2011) argues that his studies lacked rigor in his collection of data, in not reporting how participants were recruited or how many respondents were involved in coming to a particular conclusion. According to Hopkins, in turn, Piaget was dismissive of the American tendency to try to hasten cognitive development, which he sometimes referred to as "la question Americaine", the question of whether it is possible to speed up the acquisition of cognitive-stage milestones.

Further, Egan (1982) provides an interesting counter view to that of Piaget, arguing that it is the aspects of history that appeal to emotions that are most salient to children, and that the

difficulties children might have in conceptualising time were not as important as Piaget had set out. He refers to this as a general image of "conceptual poverty" (p. 437) in young children, and he argues that such a view is in stark contrast with commonly observed play and fantasy worlds of the child, even from a very young age. He points to the natural tendency of young children to be drawn into a world of the exotic and the fantastic in time. He refutes the idea that children's cognitive interaction is confined only to the elements of their immediate experience, and he argues that to do so is to ignore

> … the most prominent and energetic features of young children's thinking. If our concern is education, we might more wisely concentrate on the conceptual abilities children clearly have, and consider in what ways those abilities can be used to accomplish educational ends (p. 439).

In arguing his polemical position, Egan (1982) sets out a simple inventory of the kinds of concepts children must have in order to understand the stories they most enjoy; these can be seen as a basic set of concepts, where a teacher can embody new historical content within the concepts that children have already developed. They include such concepts as love/hate, fear/security, good/bad, courage/cowardice, and a basic first principle identified by Egan (1982) for teaching young children history is that curriculum content should consist of real events, real characters, real times, real places. The events should be dramatic; the characters, heroic; the times and places, strange and distant, so as to tap into their ability to conceptualise this fantasy world. Further, he argues that the concepts that are learned early are not simply a prerequisite for later understanding; they are a "constituent" (p. 441) of it.

2.3.7: Conclusion

The literature reviewed in this section charts the prevalent cognitive-developmental theories which influenced approaches to temporality in the curriculum, much of which have been challenged by recent advancements in research over the past 40 years. Primarily, the literature deemed the assimilation of time-related concepts to be subject to maturational forces; this denied the many and varied influences on children's levels of awareness, in the form of the home, school and wider cultural world of the child. As a result of an increase in early years' education, as well as an associated change in the way such research is conducted with young children, there is a consensus that children can embrace time concepts at all stages in their development, given the appropriate scaffolding, structures and methodologies. The influence of such advancements on pedagogy and curriculum has been significant, with the teaching of history, and specifically temporality, now being taught throughout the Irish primary school, even at level one of the curriculum, with children aged 4-6 years.

The appraisal of Piagetian-inspired work on temporaility leads me now as a researcher to examine sociocultural views of learning, largely outside of the history education literature, that make some of its insights more explicit with respect to learning processes.

2.4: Do children "ape" culture? Temporal cognition and cultural mediation
2.4.0: Introduction

> A basic fact about human nature stemming from the symbolic character of cultural mediation is that when neonates enter the world, they are already the objects of adult, culturally conditioned interpretation. …They come bathed in the concepts their community holds (Cole, 1996, pp. 183-184).

In this statement, Cole (1996) encapsulates the undeniably pervasive nature of sociocultural influences on our lives. In this section, I examine the concept of cultural mediation and its

influence on the development of historical understanding and temporal cognition, leading towards temporal ways of knowing. A number of pertinent sociocultural theories of teaching and learning are examined, which assert that human cognition is closely linked with the culture and context in which the learning takes place. This learning involves more than the person's cognitive engagement with the material to be learned, but also engagement and interaction at a cultural level. The structure of this exposition is summarised in Figure 5 below.

Figure 5: Towards temporal ways of knowing - Temporal cognition and cultural mediation
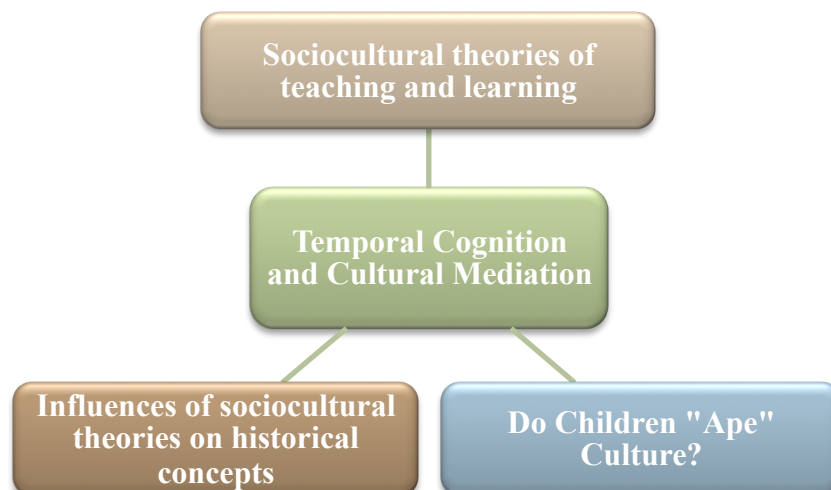
Importantly, a distinction is drawn between the child's and the adult's construction of culture, with the recognition that children are apprenticed from a very young age into an adult-centred culture, through their everyday, commonplace interactions in society. The implications of such cultural mediation for the child's temporal construction are outlined, and current temporal discourse in contemporary Irish society is charted.

2.4.1: Do children "ape" an adult construction of culture?

Hirschfeld (2002) posits that human beings are, from their birth, creatures that are shaped by the cultural world that they are born into, and he states that

> … culture so thoroughly saturates the environment that *not* acquiring it seems almost unthinkable (p. 615).

Later, he asserts
> …cultural information, cultural knowledge, is conspicuous to the point of extravagance (p. 616).

In his extensive examinations of the ways in which children acquire culture, he contends that there exists an underlying belief that by exposing individuals to information about the culture in which they operate, the person ought to take it on board in a faithful way. His earlier research (2001) emphatically refutes such an assumption, concluding that there is simply no psychologically plausible account of how such abstract knowledge contained in cultural learning can be acquired from such exposition, in the absence of the learner's own personal interaction and filtration of the material. He argues that children can learn to be "cultural actors" (p. 616). Thus, they can "ape" culture. Hirschfeld (2002) draws on Gelman's work (1994) to support this assertion, stating that the acquisition of cultural knowledge is an asymmetrical achievement, with the child gaining more from the cultural experience than what they bring to it, given "the cognitive architecture" (p. 621) they utilise to process the learning.

However, Hirschfeld (2002) argues that anthropologists have not credited children with the ability to redress this asymmetrical relationship and contribute to the task of influencing culture. He claims that an acknowledgement of such influence can make a distinct

contribution to understanding cultural environments generally. He concludes that resistance to child-focussed scholarship in this area is a result of

> … an impoverished view of cultural learning that overestimates the roles that adults play and underestimates the contribution that children make to cultural reproduction, as well as a lack of appreciation of the scope and force of children's culture, particularly in shaping adult culture (p. 622).

He argues for an increased understanding of the potential contribution by children to how cultural understanding is facilitated, and how it can be sustained. He maintains that children are skilled at acquiring and acting out adult culture, but also clever at creating their own cultures. He states that acquiring cultural skills is a lifelong activity, yet he points out that "it is patent that children do the bulk of cultural learning" (p. 612). He elaborates that in every known society, children, when they reach their teenage years demonstrate different meaningful ways of interpreting and making sense of their world, while adopting many aspects of the culture that is most familiar to them.

Interestingly, he distinguishes between adult culture and children's culture in its own right, and he cites Harris' view (1998) that

> …a child's culture is loosely based on the majority adult culture within which it exists. But it adapts the majority adult culture to its own purposes and it includes elements that are lacking in the adult culture (p. 198-199).

The connection between children's emerging cultures and the adult worlds they experience is clear. Critically, this indicates that in constructing their own cultural environments, children replicate the same kind of power arrangements and levels of authority as adults, and Harris (1998) cites what Opie and Opie (1960) term "the same moments of meaning as adults do as they create and inhabit their own cultural worlds" (p. 211). These writers call for a better appreciation of dynamic involved in the creation of children's cultural learning.

Yet, Hirschfeld (2002) asserts, "children do not ape culture, they *learn* or *acquire* it" (p. 615). Thus, the process for the child is a dynamic one which involves coming to represent cultural information, manipulate representations of culture, and use them as the basis for making sense of their own world. Resonant with Sfard's assertion above (1998, section 2.1), he argues that *participation* in a cultural environment means embracing the dynamic through which meaningful learning can take place. He draws on Sperber's (1986) claim that it is a basic human understanding that culture passes from one generation to the next through "the agency of teaching and modelling, both direct and indirect" (p. 87). This is reminiscent of Cole's (1996) assertion, that

> only a culture-using human being can 'reach into' the cultural past, project it into the future and then 'carry' that conceptual future 'back' into the present to create the sociocultural environment of the newcomer (p. 186).

Such ideas on children's culture provide significant insight into the means by which children acquire and apply notions of time, and they have key implications for this study. Applied to this context, it is evident that children are actively incited into an adult construction of time which is clearly influenced by cultural mediation. It can be argued that through their development of culture, children are not merely learning facts about time from adults in their world, rather, they are learning modern western culture. Given the importance of their own constructions as children, they are only likely to learn it in particular ways from adults, and it is probable that they acquire the adult-centred notion of time in a similar manner.

2.4.2: Exploring sociocultural theories of teaching and learning

> Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with peers. (Vygotsky, 1987, p. 90)

In searching for theoretical guidance that would help understand how people's thinking relates to their cultural experience, the work of Vygotsky' (1987) cultural-historical theory is seminal. He posited that individual cognitive skills, such as literacy and maths, are developed from the dynamic between individual and the sociocultural environment they inhabit. Thus, cognitive development if facilitated by interaction at a cultural level, while assisted by other people who have more experience of the culture than themselves.

Kozulin (2003) tracks the basis for this sociocultural approach from its origins, and concludes that the influence of culture on learning has been inseparable for centuries, seeing as the main objective of any society is the transmission of culture from one generation to another. He argues that the influence of this cultural element was not appreciated in full by educators until challenges arose in multicultural classrooms. He claims that Vygotsky's (1987) response to these encounters was his radical reorientation of learning theory, which moved away from thinking of influences on the individual in his own right and more to the sociocultural influences which shape his world. The basic concept in this theory is that of psychological tools. Kozulin (1998) defines these tools as

> … those symbolic artefacts – signs, symbols, texts, formulae, graphic organisers – that when internalized, help individuals master their own natural psychological functions of perception, memory and attention (p. 453).

The individual nature of each culture's priorities for learning culture is explored by Kozulin (2003), as is Vygotsky's emphasis on symbolic tools - mediators - that are appropriated by children through social learning opportunities. Kozulin asserts that such mediation concepts as "scaffolding" (as applied by Pea (1993) and later Wood (1999), and "apprenticeship" (as applied by Rogoff, 1990) appeared as a result of direct assimilation of Vygotsky's ideas.

2.4.3: Vygotsky's educational theory in a cultural context

Vygotsky (1987) distinguished between what he termed "everyday concepts" and "academic concepts", the former relating to the student's personal concepts, with the latter formed during the students' learning of academic knowledge at school. Academic concepts are, he argued, scientific and systematically learned, and the developmental practices of everyday concepts and academic concepts. Everyday concepts are acquired in the context of the child's own life world, whereas academic concepts are attained during formal educational activities. Significantly, Vygotsky claimed that the two types are "united into a single system of concepts formed during the course of the child's mental development" (1994, p. 365). Thus, his theory implies that the formation of academic concepts influences the already existing concepts, and it is seminal in initiating a change in their structure. It also points to the undeniable influence of social relationships. This highlights the need to take cognisance of modern-day influences on children's relationships, given the ever-extending range of relationships children can form with persons and artefacts, due to modern global media, consumerism and travel.

Haenen et al. (2000, p. 251) examine Vygotsky's emphasis on the social dimension of psychological functioning and his development of the acclaimed notion of a "zone of proximal development" (ZDP). They claim that this theory makes a clear distinction between what a learner can do on their own, without support, and what he or she can do with assistance from someone who is more experienced. Resonant with Sfard's (1998) contemporary "participation metaphor" of learning, as outlined in section 2.0 above, a child emulates an adult's way of working and gains the skill to do certain tasks without help. Haenen et al. (2000) claim that Vygotsky believed that the role of education was to give

children experiences that were within their ZPD, thereby promoting their individual skill, leading to independent learning. Interaction with adults was at the heart of this theory and, more specifically, the teacher's role was seen as central to the internal developmental processes that operate for the child.

2.4.4: Theories of situated cognition

Theories of situated cognition, or situated learning, have had a significant role to play in influencing educational thinking since they were initially developed by Brown, Collins and Duguid (1989). Emanating from the theories of Vygotsky (1962) and Dewey (1902), they advocate situated approaches to learning. The basis of the theory is that meaningful learning can take place in situations where learning tasks are designed that challenge students, and assistance is required to complete the task from a more experienced peer or teacher, who emulates best practice on how this is to be done. Herrington and Oliver (1995), further proponents of the theory, claim that it is

> … an attempt to *begin* the process of developing a theoretical perspective for successful learning which cognitive science had not, to date, been able to explain (p. 3).

These writers cite Lave and Wenger (1990) who proposed situated learning as a model of learning in a "community of practice" (p.110). They argued that learning is inseparable from experience or doing, and that all knowledge is situated in activity that is connected either with the physical, social or cultural worlds of the learner.   They posit that this connection is intertwined with the learner's sense of identity as they grow to determine their place within their community, and where certain beliefs and behaviours can be acquired. They contrast

this learning model with classroom instruction and learning that presents knowledge in an abstract, out of context form.

Brown et al. (1989) concur, seeing it as a theory of instruction, though not just applicable in a formal school setting, that sees an inextricable link between the practice of a skill or newly learned activity and the context and culture in which it takes place They see the approach as more effective because concepts

> … continually evolve with each new occasion of use, because new situations, negotiations and activities inevitably recast it in a new, more densely textured form (p. 33).

These writers (1990) provide a comprehensive framework for designing situated learning environments and identify six critical components.   These characteristics are presented diagrammatically in Figure 6 below.

Figure 6: Framework for the design of situated cognition environments (Source: Browne et al., 1990).
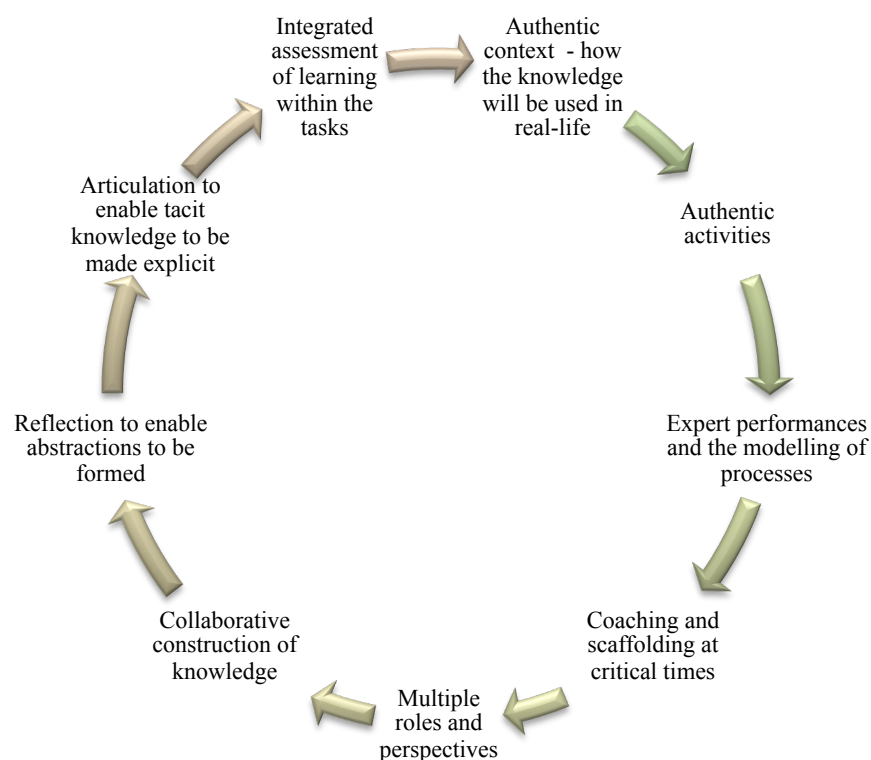
Despite the range of scholarly interest in the potential of situated learning and situated cognition theories for the design and implementation of teaching strategies, there has also been criticism. Most previous studies have examined the constituent elements in isolation. Herrington and Oliver (1995) contend that the effectiveness of this approach lies in the complete application of three constituent elements, as follows: the appropriate design of the programme, the appropriate design for the student, and the design for the implementation process, including the subsequent learner behaviours. They point out that the use of this approach to the design of learning situations has much to offer curriculum and pedagogy.

2.4.5: Sociocultural theory and the practice of teaching historical concepts

Haenen and Schrijnemakers (2000) apply sociocultural theory to the specific teaching of historical concepts, and they use the theory to challenge trainee teachers' traditional use of an information transmission model in undertaking such work. Although their work relates to the post-primary setting, it is pertinent to this study of the primary school child's temporal cognition also. The writers identify two basic elements in helping novice teachers teach for historical understanding: create and utilise methods that

a)   set up effective learning environments;

b)   ensure that the historical subject matter is meaningful in its own right.

Within this model, the learning environment can be conceived of as collaborative, where the student is encouraged to participate fully in the learning process.

Haenen et al. (2000) acknowledge that teaching historical concepts is often associated with fostering conceptual change. They point to the importance of acknowledging students' prior learning, while recognising the inherent difficulty experienced by history teachers in

assessing the level of students' prior knowledge. They claim that the process of concept formation is reliant upon the re-conceptualisation of students' existing body of prior knowledge (p. 248).

Woolfolk (2001) concurs, emphasising the importance of active and inductive learning. She specifically relates the theory to the process of knowledge restructuring in the learning of historical concepts. These concepts are defined by Woolfolk as

> … the building blocks of human thought; they reduce the complexity of the environment and enable us to respond to it efficiently (p. 278).

Further, Joyce and associates (2000) set out an interesting proposal on how to teach concepts in the classroom. First, the teacher helps orientate and introduce the student to the learning exercise, providing opportunities for them to engage with the content, identifying the essential and non-essential information (eg. topic of King John's Castle). Next, the students consider wider aspects of the concept and think and talk about their attributes (e.g. "castles" more generally). Finally, a working definition is derived, which can be refined as the concept is fully understood.

This approach has been applied with success in a number of teacher education programmes, to reflect a student-centred approach, with teaching-learning processes based on the students' own learning activities. One key merit is its significance in highlighting students' partial or incomplete acquisition of a concept.

2.4.6: Appropriation, resistance and historical discourse

Sociocultural theorists such as Wertsch (1998) assert that learning does not just involve retaining new information or engaging cognitively with knowledge, rather it involves acquiring new learning from the social context in which the learner is embedded. The term "appropriation" is applied by Wertsch to the process of constructing and internalising (Rogoff, 1990) knowledge from within the learner's society and culture, combining it with previously held learning. Billet (1998, p. 21) concurs and argues that it also involves a developmental process which draws on both the developmental theories of Piaget and Vygotsky, but he asserts that both the cognitive-developmental and socio-constructivist views of learning are equally emphasised within this framework. Thus, knowledge is constructed from within the learner's social milieu, with active engagement by the learner in this process. This view is shared by Cook et al. (2002, p. 394), who see the appropriation process as successful when the learner takes their own meaning and use from the new knowledge.

Grossman et al. (1999, p. 15) identified a hierarchy in the developmental process, through which appropriation occurs. Initially, the student grows into dependency by deferring to the authority of the teacher, submitting to their wisdom and beliefs. Next, the student mirrors the knowledge and rules of the teacher, but brings a critical lens to the dynamic. This leads to a co-construction and negotiation of meanings. Ultimately, within the process, the student grows out of dependency and constructs his own beliefs. The student understands how their learning environment operates and s/he can apply these more generally outside of the specific community setting.

Reflecting long-standing insight from cognitive science about the importance of learners' prior knowledge, Billett (1998) asserts that through appropriation, the learner formulates his own meaning from the knowledge, and this allows the new information to be accommodated. Conversely, resistance theory (Giroux, 1983) found evidence of "unfaithful" policy implementation in many forms, from openly hostile confrontations between students and teachers with their superiors, to highly passive, private acts of defiance. This resonates with the theory espoused by Barton and McCully (2010) arising from their research relating to post-primary school students' experiences of encountering history as a subject on the Northern Ireland curriculum. They concluded that the students were not simply accepting or rejecting particular historical narratives; rather, they were engaged in a more complex process that involved internally persuasive discourse, as they drew from multiple "historical representations" (p. 143) in an attempt to form their own point of view on the region's troubled past. These accounts included print and electronic media, museums and sites of historical interest, peers, relatives and other community members.

2.4.7: "Cultural capital" and "concerted cultivation": influences on the child's conceptual understanding of time?

It is worth focussing on how children of diverse cultural experiences and socio-economic backgrounds experience "time" differently. An examination of the concepts of "cultural capital" and "concerted cultivation" is pertinent here, as it can provide key insights into influences on children's lives, their cultural and social experiences, and how such experiences influence how they spend their time, outside of the formal school setting. It is worth considering links between their personal experiences of time and their emerging conceptual understanding of time.

The French sociologist Bourdieu (1986), working with other researchers, coined the term "cultural capital" to describe the value that learners attain from their interactions within their culture and social settings. The writers look at the relationship between such cultural tools and their impact on school achievement, arguing that they are more influential than economic factors. Bourdieu's concern was with the inequalities that can exist in the ways that cultural capital can be promoted and delivered. He challenged the traditionally held view that academic success or failure rests on the ability of the individual, their talents and aptitudes. He explained academic achievement as being highly influenced by the amount and type of cultural capital they get from within the family setting, rather than being determined by natural ability alone. Thus, ability is socially determined and the product of an investment of time and cultural capital.

The more recent work of sociologists such as Lareau (2002, 2003) and Lamont (2000) points to the unequivocal influence of parents and their social class on choices made regarding their children's use of time, and how it is managed outside of the formal school setting. Lareau's seminal work (2003), entitled *Unequal Childhoods,* introduces the term "concerted cultivation" to describe an approach to parenting that steadily promotes their child's talents and interests, by incorporating a range of organised activities in their children's lives. Thus, cultural capital is inherited from the family milieu (p. 104), in the extra-curricular activities that are arranged by parents to promote different aspects of their children's development.

Lareau (2002) contends that this style of parenting is most usually detected in families from middle and upper classes within society. It is often reflected in the manner in which children's language and social interaction is promoted and developed, thus providing them

with "cultural advantage" (Lamont, 2000). Lareau (2002) maintains that poorer parents, by contrast, tend to follow a strategy of "accomplishment of natural growth" (p. 747), where their children are left to their own devices to a greater degree, with greater free, unscheduled time, to spend as they wish. This style exemplifies a commitment to responsible and caring parenting, yet it affords them greater scope to develop on their own without undue influence. According to Lareau's theory, 'concerted cultivation' parenting is evident in middle class families, while 'natural growth' is more reflective of working class families.

Lareau's study (2002) points to the advantages and disadvantages accruing from each of the parenting styles. She concludes that while poorer children were often better behaved, less demanding and more creative that their middle-class counterparts, none-the-less, concerted cultivation had considerable advantages. The heavy and varied scheduling exposes the middle-class child to a wide range of experiences and expectations, promotes team work and social-interaction skills, as well as an ability to express opinions and thoughts. Thus, in Lareau's opinion, the middle-class child develops a sense of entitlement, and an ability to act on their own behalf to gain advantages. Conversely, poorer children display an emerging sense of distance from, and distrust of, people in authority.

Most importantly, Lareau (2002, p. 747) posits that concerted cultivation causes a "transmission of differential advantages", which brings them a level of advantage in life over children who have not been parented in this manner. The advantage is educational, financial and social, and they can interact more confidently in social situations.

2.4.8: Temporal discourses in contemporary Irish society

The nature and extent of temporal discourses in contemporary Irish society warrants examination for the perspectives they offer for this study on children's temporal cognition. Such discourses present opportunities for discussion and dialogue around children's time-related activities and their possible influence on coming to temporal ways of knowing. In this section, three recent Irish surveys are examined for their insights into children's personal experiences of time, especially their free time, outside of formal schooling. Such an examination helps us understand the dynamics, if any, between the child's personal experiences of time and the potential impact on their understanding of historical time.

The Irish studies examined are as follows:

1. O' Connor (2008) The *Irish Children and Teenagers in a Changing World"* study, conducted as part of "The National Write Here, Write Now Project";

2. Williams, et al. (2009) The "*Growing Up in Ireland"* longitudinal survey*;

3. Humphries et al. (2011) The "*How are our Kids?"* study, conducted in Limerick as part of the regeneration programme.

2.4.8.1: Temporal discourse in *Irish Children and Teenagers in a Changing World*

O' Connor (2008) addresses the nature of temporal discourses in Irish society, concentrating on children and teenagers, entitled "Irish Children and Teenagers in a Changing World". The millennium celebrations provided the context for the work, and the study provides engaging and informative insights into the experiences, dreams and hopes of children (aged 10-12 years) and teenagers (aged 14-17 years) in contemporary Ireland, much of which is relevant

to my study. Not surprisingly, the majority of respondents referred to some aspect of the future, and part of the study examines the nature of their temporal discourses, how they view themselves in the context of change and developments in their lives.

In the survey, 62% of respondents made some reference to the future, and little variation was evident between the responses of boys and girls, or between younger or older cohorts of students. Almost half of the young people who referred to the future made reference to their dreams, hopes, ambitions or plans, and the most common of these references was to their personal future. Interestingly, their individual life course, defined as the period from their birth to their death (p. 73), was mentioned by only 22% of respondents, and some of these references occurred in the context of stories children told of their own experiences.

O' Connor (2008) argues that "a historical sense of time involves a sense of oneself as part of an age cohort" (p. 74), with the distinctive lifestyle and attitudes associated with that cohort. In the study, there were very infrequent references to generational positioning, or family traditions. Typically, in so far as any such references were made, their own generation was associated with that of the 1960's, a point which can be explained, according to O' Connor, as reflecting their knowledge of their parents' generation.   Significantly in the study, "time" featured in the accounts of respondents in the sense of describing themselves as having "no time", a point understood to describe how busy their lives are with activities and commitments, apart from school-related events.   The writer views this as reflecting the intensification and individualisation of everyday life and she recalls the work of Giddens (1991) in this regard. Interestingly, while there appeared to be little variation in the responses

by age or gender, girls and younger children were marginally more likely to have a sense of their own life course and generational positioning.

2.4.8.2: Temporal discourse in *Growing Up in Ireland*

Temporal discourse emanating from data accrued in the longitudinal *Growing Up in Ireland* survey (2009) is examined here for the specific findings and possible insights into children's use of their time outside of formal schooling. The element of the study which is pertinent to my topic draws on data collected during Wave One of the Child Cohort (2009), involving 8,500 9-year-old children, their parents, teachers and principals. It is envisaged that these children will be revisited for a follow-up interview when they are 13 years old.

The data shows that a wide range of sporting, social and cultural activities were listed by respondents as commonly experienced extra-curricular activities. Smyth et al. (2010), members of the research team, point to the mediating role of resources and parental attitudes on educational outcomes, corroborating the existing research outlined in section 2.4.7 above that demonstrates indicates that such 'enrichment' activities do indeed advantage the of children's educational development (Bourdieu, 1986; Lareau, 2003, Lamont, 2000).

The findings delineate five distinct groupings of such activities, based on the patterns that emerge in the survey, as follows:

1. a group who spend time engaging in sporting activities, while also favouring time with their friends and viewing TV. This cohort demonstrated a low level of interest in using computers;

2. a group who highly valued and utilised ICT for purposes of social networking, communicating with friends, reading and taking part in cultural activities;

3. a group who like to use their time on sporting activities, and playing computer games, yet read less and have little interest in cultural activities;

4. children who valued cultural activities, on their own or in groups, such as reading or extra-curricular activities, such as music lessons;

5. the busy lives group, who are engaged in a wide variety of activities on a sustained basis - ICT, reading, cultural activities, sports and video games.

Significantly, of the children interviewed, along with their primary carers, some 15 per cent fell into what they called the "busy lives" category, where children engage in a lot of out-of-school activities, and have little time thereafter that is unstructured. Interestingly, however, the survey suggests that over-structuring children's recreation can cancel out the benefits of "concerted cultivation", as outlined in 2.4.7 above. An element of the survey examined the causal relationship between extra-curricular activities and children's academic performance. One such finding relates to how time spent on computers and video gaming seems to promote engagement and achievement at school. This finding is reminiscent of the pioneering work of Hungarian psychologist, Csikszentmihalyi (1990) on the theory of "the flow state" who describes it as an optimal state of intrinsic motivation, where the person is completely absorbed and concentrating on whatever activity they are doing.

> Flow involves a sense of profound mastery, at work or play, in which concentration and performance just seem to flow. People in flow are completely absorbed, effortlessly focused, and unaware of the passing of time. Their self-confidence rises, and their competency grows. Those who experience flow are tremendously motivated by it and are drawn to re-creating it as often as possible (p. 119).

The implications of such experiences of intense absorption in the activity are evident for the classroom work children do and they point to benefits for overall academic performance.

The survey also found discernible differences in the choice of how to spend their free time between the boys and girls, as well as their socio-economic background. Boys demonstrated a preference for sporting activities or the use of gaming devices, while girls preferred social networking. Congruent with the theorists examined in section 2.4.7 above, children who grew up in more socio-economically advantaged families had more access to cultural experiences and social opportunities. Immigrant children did more social networking, but less sports, while children with special learning needs featured more in the TV/sports group. Interestingly, having a physical disability or chronic illness does not appear to adversely affect their engagement in extra-curricular activities and they had busy lives. Not surprisingly, the findings of the survey identify disparities between the choice of extra-curricular activities of urban and rural children.

2.4.8.3: Temporal discourse in the study *How are our Kids?*

This study (2011) provides an account of the experiences and needs of children (of all ages) and families in Limerick city, with a particular emphasis on Limerick's Regeneration Areas. The report identified common trends in the ways school-going children spend their time outside of formal school time and it concluded that the majority take part in a diverse range of structured activities.

Significantly, the study examined a link between partaking in such activities and their ability to socialise more fully with other children and adults. It claimed that their concentration at school improved and their skill development was enhanced in areas such as sport and music. The researchers highlight the pivotal role of the school in the provision of opportunities for

such out-of-school activities, both in terms of providing a physical space for them, but also a familiar, convenient venue for use by the community.

In Limerick's regeneration areas, sport and cultural activities are the most popular activities undertaken by respondents. The research team noted an increase in youth club membership, younger children's clubs, homework clubs and after-school activities, and they attribute this to better provision of such activities in these areas.

2.4.9: Conclusion

The undeniable influence of children's social and cultural experiences on their emerging conceptual understanding of time has been established in the literature examined here. Specifically, the particular processes by which historical concepts can be established and appropriated through sociocultural influences have been considered and charted through the exploration of germane theories. Clear evidence is presented to assert that due recognition must be given to the potential of the sociocultural milieu in facilitating such learning. This underscores the need to identify and challenge the under elaborated nature of existing pedagogical and curriculum approaches in this regard, thereby offering a more expansive approach to the development of children's temporal ways of knowing. Yet, the literature also duly recognises the stark divergences that exist in the day-to-day experiences of children, depending on the school and societal influences on their lives. This is evidenced in the claims of the three contemporary Irish studies cited. This literature provides a solid foundation for conceptualising temporal ways of knowing and for analysing data generated by the school-based qualitative interviews that were conducted in Phase 3 of this research, as presented in chapter 6 below.

2.5: Provision for temporal ways of knowing in the Irish primary history curriculum

Significant developments have taken place in recent years in relation to the teaching of history in the Irish primary school, with the introduction of the revised curriculum in 1999. This was introduced, following a lengthy consultative process over an eight year period by the National Council for Curriculum and Assessment (NCCA) in Dublin with the partners in education – representatives of parents, churches, teachers, managerial bodies and academics who are subject specialists. The process involved a comprehensive review of *Curaclam na Bunscoile*, the previous curriculum that had been implemented in primary schools by the Department of Education and Science (DES) since 1971. The revision work commenced in 1993, undertaken by a series of Curriculum Committees. Specifically, the review of the history component was undertaken by the Curriculum Committee for Social, Environmental and Scientific Education (SESE). Strands and strand units were identified as discrete units of work which would be undertaken in all Irish schools over each of four, two-year cycles or "levels", regardless of their demographic profiles - urban or rural, large or small, serving a social-economically "advantaged" or "disadvantaged" community, or comprised of mixed or single-sex pupils.

Reflective of the developments in historical education and the "New History" approach outlined in section 2.2.2 above, its introduction marked a new departure from the curriculum of 1971, with an emphasis on the child engaging in educational activities that would enable the development of historical understanding. Waldron (2003) provides interesting projections into the impact of these proposed changes, gathering data from 10 year old children's spontaneous writings about the meaning of history. Congruent with the earlier writings of Levstik and Barton (1996), her study indicated that children at primary school

level were both interested in, and knowledgeable about, the past. Their writings reflected an emerging sense of the complexity of history as a subject and, in some cases, evidence of competing ideas about the past, involving references to national/world history, social/political history, as well as historical skills and concepts. Yet, she cautions that

> … planning for curricular change and innovation does not guarantee change in classroom practice or in how children experience curricular subjects (p. 68).

Central to the constructivist philosophy of the revised curriculum is the tenet that such understanding can be developed by young children at all ages of their primary schooling, by cultivating 7 key historical skills and second-order concepts. Thus, an emphasis is placed on the development of the skills and competencies that enable young children to model the work of a professional historian, with the child being an active agent in the learning process. The teacher is urged to promote discovery learning, collaboration and the natural curiosity of the child, while developing a progressive, spiral approach in building children's conceptual understanding of the facets of historical understanding deemed pertinent at the primary level. These involve the development of the prerequisite second-order concepts, as outlined in section 2.2.5 above:

- a cognition of time and chronology;

- an understanding of what has changed or stayed the same (continuity) over time;

- an ability to reason from cause to effect;

- the skill of using evidence;

- an ability to synthesise new and old learning;

- communication skills to present findings;

- understanding and empathy with, the lives of people in any given time-period studied.

The skill set is represented diagrammatically in Figure 7 below; I am using this graphical representation to convey the centrality of time and chronology as a prerequisite skill in the range to be acquired, though a distinction is not drawn between first-order and second-order concepts *per se* in the document.

In addressing the cognition of time and chronology, the curriculum asserts that "history uses skills and concepts which are associated with time, sequence and chronology" (p. 8), a statement that implicitly establishes the centrality of temporality at primary level. It makes reference to the developmental nature of temporality, stating that "children's sense of the past will become somewhat more sophisticated as they grow older" (p. 8).

Figure 7: Key historical skills and concepts to be developed by the primary school history curriculum
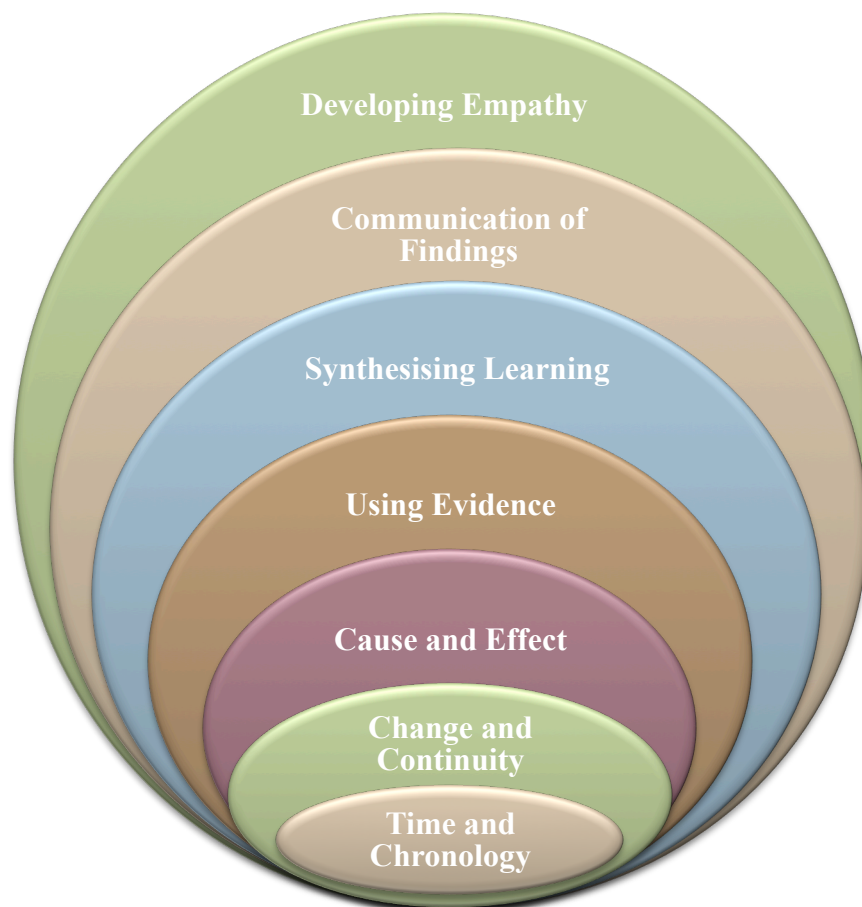
It can be argued that this represents an under elaborated framing of temporality, reflecting only the cognitive-developmental perspective on historical ways of knowing. Little or no credence is given to the sociocultural influences on such learning; this is evidenced in the skill set selected for development. While the physical environment of the school is deemed an important learning resource in history teaching, no coherent argument is proffered on the potential contribution of broader social and cultural influences on historical learning.

2.5.1: Literature on the Irish History Curriculum

In this section, I examine approaches to history in the Irish curriculum and in textbooks up to the introduction of the Revised Primary Curriculum (1999). To begin, influences on history curricula are examined.

Guyver (2013), in his review of a wide range of extant curricula across 15 different settings, examines influences on how history curricula are shaped. He outlines what he terms the dynamics at play in history teaching, curriculum and research and concludes that there are commonly experienced problems in trying to implement theory in the day-to-day classroom context. Motherway (1986), in the Irish context, concurs, stating that "the practical reality of school curricula seldom conforms to the ideals of official pronouncements" (p. 35). Among the challenges to implementation are schools' wide array of individual needs and differences in culture. Guyver (2013)also outlines the influence of local and national politics in determining how such curricula are to be formulated and implemented. He cites often divergent thinking and understanding about the nature and purpose of history education among the different stakeholders as being significant, including educators, policy makers and the public at large.

Guyver delineates two opposing approaches in history curricula that emerge from his comprehensive review:

> … on the one hand an approach which promotes knowledge of national history and national values in the interests of preserving collective memory and fostering national identity, … and on the other a model based on a disciplinary focus supported by historical thinking, where the content is not dominated by the nation but has become diversified and globalised (p. 3).

He elucidates the challenge inherent in striking a balance between quality and quantity, and concludes that 'history wars' (p. 4) are about harmonising the broad, expansive range of material that addresses a nation's narrative and the development of historical understanding through experiential learning techniques.

Specific to the history curricula in Northern and Southern Ireland, McCully and Waldron (2013) examine approaches that were common to both structures, since the setting up of a national schools system in the early 1830's, until separate curricula were introduced in 1900. The initial approach is described by the writers as 'narrow and literary' (p. 146), and the power of the hidden curriculum in promoting an agenda is also acknowledged as being significant. They conclude that the primary curriculum focus from the outset was to foster and promote a sense of British identity, with textbooks, commissioned by the state, being used to arbitrate the content to reflect this end. The writers chart the development of separate curricula in both jurisdictions thereafter as reflecting the move to promote positive attitudes on the one hand, towards the United Kingdom in Northern Ireland, and on, the other hand, towards the nationalist identity in the Republic of Ireland. The respective curricula were characterised as having an agenda to represent Ulster as British and, from the southern view, Ireland as Irish.

Motherway (1988) charts developments in history education in Irish primary schools over the period 1922 to 1971. From 1922, within the broad curriculum, history was taught from third to sixth standard, with an emphasis on the history of Ireland in senior classes. Reminiscent of what Taylor (2013) terms, as cited by Guyver, as an approach that is mile - wide and inch - deep, the period studied was expansive and the outline of content was general: Fifth class - St. Patrick in Ireland to the Act of Union in 1801 (1400 years); Sixth class: History of Ireland from the early 18th century to the foundation of the state (p. 36).

Motherway (1988) traces the introduction of a new programme of study in 1926 where history was introduced from fifth standard, with an emphasis on the general history of Ireland, commencing with early prehistoric legends. He claims that local history was studies as a means of illustrating national history only (p. 36). A further iteration was introduced in 1962, with greater emphasis on historical periods. Motherway characterises the approach, on the whole, as designed to "cultivate a patriotic outlook in children" (p. 37), with a strong reliance on history textbooks as information sources. He examined reports from Department inspectors to conclude that the content was very narrow in focus, an expository approach was the norm, with children reading orally, and little effort was made to ensure the content was interesting. He outlines the literal nature of the learning, with a strong emphasis on the recall of factual information.

The New Curriculum of 1971 approached the teaching of history in a less segmented fashion, as part of the *Daoneolas agus Eolas Imshaoil* area of the curriculum, encompassing four elements – Civics, History, Elementary Science and Geography.   There was a strong emphasis on a multi-disciplinary, integrated approach, with the child making extended connections between the historical content and other areas of study, as appropriate. The local

environment of the child was seen as a rich source of information and one to be studied directly. However, Motherway (1988) cites subsequent evaluations of the implementation of the 1971 curriculum as providing data that leads to a conclusion that

> … many of the aims of the 1971 curriculum remain, for most schools, mere aspirations. The textbook continues to dominate classroom life and local history continues as a marginal activity (p. 44).

This assertion regarding the role of textbooks reiterates Motherway's earlier position (1986) that such expository texts could not achieve the stated aim of engaging children in the detailed line-of-development and patch study approaches to a topic, as advocated in the 1971 history programme, with an emphasis on children's active engagement in the learning. However, despite this reservation, he concludes quite starkly

> … in practice, … the history textbook is more than a teaching aid; rather it constitutes the history curriculum. The textbook provides the content; it structures and sequences this content; it provides the assignments and forms the basis of the methodology; implicitly, it provides the aims (p. 195).

The 1971 history curriculum was replaced by the revised primary history curriculum in 1999, which reflects constructivist principles (as outlined in section 2.1 above). Its requirements, and particularly its approach to the development of temporal ways of knowing, are now examined in detail.

2.5.2: Temporality in the Irish primary history curriculum – perceived limitations

While the revised history curriculum provides opportunities for temporal ways of knowing to be developed at the level of the intended curriculum, nevertheless, it can be argued that it does not explicate fully the manner in which this can be enacted. While a number of

exemplars in the *Teacher Guidelines* (pp. 48-55) refer to the manner in which the key skill of Working as a Historian can be addressed at each of the four teaching levels, among them the skills of time and chronology, it does not comprehensively outline the complex, multi-faceted nature of its specific cognitive process, as delineated in the forthcoming literature review. Thus, the various cognitive-developmental dimensions of temporal understanding that would be considered applicable at primary level are not specified and the influence of cultural mediation on children's emerging sense of temporality is not adequately acknowledged. It can be argued that this constitutes a missed opportunity.

In addressing the second of my research questions, my study contends that the process of addressing temporality within the curriculum needs to be examined to determine its role in the promotion of historical understanding. While a rationale is provided for the development of the skills of time and chronology, the history curriculum does not explicitly establish or rationalise that temporality is a fundamental prerequisite in the development of historical understanding at primary school level.

It can be argued that the rationale provided by the curriculum planners for the inclusion of history as a discrete subject on the curriculum at the infant level (level 1) is less than convincing. It is acknowledged that children of this age-range have "… a very imperfect sense of time" (p. 3) and research is cited and "practical experience with children" (p. 3) which supports the argument that children's sense of time and chronology can be aided by what is broadly categorised as "… some carefully chosen history work" (p. 7, Teacher Guidelines). The curriculum planners conclude that while young children's sense of time may not develop automatically, there is merit in teaching time and chronology concepts at this level.

It can be argued that the complex nature of temporality, as well as the concomitant challenges that it presents for classroom practice and the professional development of teachers, are understated and underdeveloped in the curriculum.   While the child's conceptual understanding of historical time is emerging, it is unfair to portray it as "imperfect" (p. 6, Teacher Guidelines) or associate it with poor mastery on the part of the child.   Further, the developmental challenges associated with temporal cognition are scarcely acknowledged: "… as they grow older … they develop gradually a sense of perspective in time" (p. 8, History Curriculum). Yet, the specific components of temporal cognition are not enumerated at any point in the documents concerned.

My study contends that, in the absence of an elaborated perspective on temporality in the curriculum framework, it is likely that teachers' approaches to temporality will lead to gaps and missed opportunities in the systematic development of temporal cognition. It can also be contended that the approach, as outlined, provides insufficient guidance to textbook authors, who are all experienced teachers, in devising textual materials in history, with a consequential impact on how temporal understanding is to be addressed and promoted in schools. This assertion is borne out in the data procured in this study from a content analysis of a range of such textual materials (section 3.2).

The NCCA has not conducted an appraisal of the history curriculum in the intervening years since its initial introduction, and this reflects the lower priority afforded to historical learning, unlike the other curricular areas which are given notable precedence, such as science, literacy and numeracy. While in-career development programmes were made available to teachers to help them assimilate the revised history curriculum in the school year 2005/2006, and formal implementation took place in 2006/2007, further support at school level ceased in 2009 when

the Primary Professional Development Service (PPDS) completed its training schedule. No comprehensive evaluation of the implementation phase has been undertaken by the NCCA in the intervening years. Only one limited piece of research was undertaken (2005) to determine the extent to which participatory methods were utilised by practitioners; the research mechanism applied was confined to self-reporting techniques by respondents and there was no rigorous, omniscient analysis conducted of the implementation level.

My study draws attention to an apparent lack of accountability that exists, or is required of teachers, for what Porter et al. (2011) term **"enacting"** the history curriculum requirements. Again, compared with literacy, numeracy or science, there would appear to be little political impetus for addressing this anomaly. A number of concerns can be presented to support this claim:

- no data has been compiled to determine the extent to which the 7 key skills (Figure 7 above) or concepts are being developed;
- teachers are not required to account for skill promotion in the schemes of work or monthly accounts they prepare for the DES Inspectorate;
- standardised testing is not available for history, and recommended approaches provided for the assessment and evaluation of children's learning are very unclear.

The teacher guidelines of the history curriculum claim that assessment should embrace the knowledge of the strand units, the development and application of historical skills, as well as the values and attitudes which are fostered by the child. However, while a guided approach is provided for the evaluation of the knowledge component of the history programme, skill assessment techniques, including time-related skills, are absent from the guidelines, and insufficient direction is provided on how they are to be successfully undertaken. While the

curriculum acknowledges the following challenges, my study posits that direction in how they are to be addressed is inadequate:

- assessment of skills is a complex activity;

- techniques such as written tests do not measure the acquisition of historical skills;

- skills are best assessed in the context of children's activities and discussions;

- skill development may be assessed as children work individually or in groups.

The guidelines support an approach to assessment in history teaching that utilises techniques such as observation of children, teacher designed tasks and tests, observation of pupils' work samples, portfolios and projects and the compilation of curriculum profiles. It is arguable that such broad techniques could not adequately assess the breadth of complex, multifarious skills involved in developing historical understanding. While some of the skills may be reflected in teachers' everyday classroom interactions, it is unlikely that the intricate higher-order skills will be developed, given the proposed curriculum approach and lack of in-service support for teachers. Considering the centrality of temporal cognition in the development of historical consciousness, it would appear critical that the child's emerging skill in that area would be prioritised for evaluation.

In endeavouring to redress this under elaborated approach in the history curriculum towards temporal ways of knowing, my study provides a more expansive exploration of the intricate processes involved in facilitating the young child's emerging temporal cognition. In addressing the third of the research questions, my study offers insights into temporal ways of knowing from the cognitive-developmental, as well as the socio constructivist perspectives. These theories, as espoused in the literature, are augmented by a store of data acquired from

the three inter-related research strands, but especially from a set of school-based qualitative interviews conducted with children, which is presented in section 3.3 of this work. Convergences and divergences with the existing literature will be identified.

2.5.3: Provision for temporal ways of knowing in the primary history curriculum in England

The teaching of chronology became compulsory in English schools following the introduction of the framework document, *History in the National Curriculum* (Department of Education and Science (DES), 1991). A key attainment target 1 sets out the requirement for all children to develop competence in time-related language and chronological sequencing, in a spiral manner as they progress through the primary school. Teachers are provided with schemes of work by the Qualifications and Curriculum Authority (QCA) as a support in delivering activities which reflect the desired learning outcomes and attainment targets. The authority has a similar function to that of the NCCA in Ireland, but no such schemes of work have been devised for distribution to schools by that body.

Hodkinson's (2003) prolific investigations into the provision for temporality in the English curriculum provide interesting insights. His research conducted with children aged 8 to 9 years, led him to discount the hypothesis that age is the sole determining dynamic in temporal conceptual development, despite what he deems a widely accepted view that the assimilation of temporal concepts is subject to maturational forces. However, he argues (2003) that in the NC of the UK, the framework of learning and the Schemes of Work that guide teachers in their content selection and methodological approaches, reflect an acceptance of this tenet, especially in the spiral approach advocated. He sees this as a fundamental flaw and he

concludes that "whilst age is a necessary condition for development (of temporal constructs), it does nothing to determine that development" (p. 11). Like Haydn et al. (2001), he points to the importance of the quality of learning experiences and the learning environment as being a significant factor in the assimilation of time concepts and he asserts that process is not necessarily contingent on levels of maturation.

Further, Hodkinson (2003) identifies an issue with the prescribed approach to temporal language development in the history NC. He claims that it begins in the early years with an emphasis on subjective time terms to describe events that happen, and moves on the use of dates and basic, conventional time terms. This skill is further developed to senior class level by ensuring that children have attained, and can accurately apply, a repertoire of more advanced temporal conventions such as dates, AD, BC, etc. Hodkinson concludes from his review that "it appears that the treatment of aspects of the development of temporal concepts is vague and confused with some statements of age related learning appearing wholly unrealistic" (p. 29). His research attests to the wide range of meanings that children can attribute to a subjective temporal phrase such as "a long time ago' and he concludes that such meaning is subject to the "vagaries of comprehension" (p. 30). He concludes that the curriculum and the schemes of work do not adequately scaffold children's temporal learning opportunities. Reminiscent of the claim in relation to the Irish history curriculum, this represents a missed opportunity.

Hodkinson (2004) also cautions that whilst the teaching of chronology has become enshrined in the national curriculum, it hasn't necessarily been grounded in the extant research findings. He critiques the outline of methodological approaches and assessment procedures, as promoted, and provides ample examples of divergences with the literature base.

Despite these reservations, Dawson (2007) points out that the "the assumption that pupils develop chronological knowledge and understanding by studying topics in chronological order still holds sway" (p. 1) and he outlines concerns about planning for effective provision for the development of chronological awareness, especially beyond the primary level. He outlines a framework and sets objectives for the teaching and learning of chronological knowledge and understanding, with an emphasis initially on building an understanding of the appropriate vocabulary, with a distinction between "descriptive", "technical" and "conceptual"(p. 3). Further objectives include building the child's sense of period, as well as a sense of scale of how long ago a historical event happened relative to another. For Dawson (2007), developing a knowledge and framework of past events was a key goal and he stresses the subjective nature this process, involving the planned and nurtured formation of

> … a kind of mental map that enables us to make connections and draw comparisons across periods" (p. 14).

He cites the seminal work of Haydn et al. (2001) as being influential in this conceptualisation, especially their four-part classification for teaching and learning about time (which they labelled T1-T4), which ultimately leads to the concept of "deep time", involving a conceptual understanding of the breadth of past time periods from the formation of the earth onwards.

2.5.4: Towards a re-conceptualisation of temporal ways of knowing

Extrapolating from the cognitive-developmental and sociocultural influences on historical learning in general, and temporality in particular, a basis is provided for a re-conceptualisation of how temporal ways of knowing can be fostered at both curriculum and pedagogical levels. Central to such a re-conceptualisation is a clear recognition of the

mediating role of the school in the development of children's temporal cognition. Essentially, how the school approaches temporality will depend upon its perspective:

- does the school recognise the centrality of temporality in the development of historical learning?

- does the school appreciate the complex nature of temporal cognition and the broad range of facets that need to emerge over the course of the child's primary schooling at a cognitive-developmental level?

- does the school give due credence to the sociocultural influences on the child's temporal ways of knowing (like, socio-economic class, children's globalised and more complex cultural worlds, capacity for appropriation and resistance of temporal concepts etc.)?

In contemplating the school's mediating role, the use of history textbooks deserves particular consideration. Essentially, textbooks can be seen as the quintessential mediating tools, reflecting what Stray (1994) describes as "an authoritative pedagogic version of an area of knowledge" (p. 2). They aim to embody the guiding principles of the curriculum and mirror them in the programme of study that they establish. Waldron (2013) asserts that history textbooks can play an "especially charged role" (p. 54) in the learning environment where children begin to develop a knowledge of the past and its relationship with the present time. Valverde et al. (2002) concur, asserting that textbooks play a role in translating policy into practice. Their observations emanate from a cross-national study of textbooks, which was a component of the Third International Mathematics and Science Study (TIMSS) that analysed how textbooks shape learning opportunities at post-primary level in mathematics and science. The writers refer to textbooks as an "enactment of intention" (p. 12), which

> … translate the abstractions of curriculum policy into operations that teachers and students can carry out (p. 2).

However, they also note that the textbooks can often be poor "exemplars of such a vision" (section 2.2.11) and they outline their disquiet at the study's finding that the primary relationship between system-wide policies and the achievement of children is through textbooks. Looney's (2003) study, conducted with post-primary teachers in Irish schools, similarly concluded that they believed the textbook was more influential than the curriculum in making decisions about classroom teaching.

These findings point to the mediating role of the textbook in the appropriation of the content knowledge set out by the curriculum. My study contributes further to this debate by providing many new, specific insights into the content and approaches of Irish history textbooks and their provision for temporality at primary level. Primarily, as established in Chapter 4, the content analysis I undertook provides disquieting evidence of a mismatch between what is overtly proposed as the approach by each individual author, and what is actually enacted in the texts. The study reveals a wide range of disparate, subjective approaches by authors, and an inconsistent approach towards the realisation of the constructivist principles of the curriculum. This emanates in the main from an apparent absence of any guiding policy framework for textbook compilation. My study concludes that while these authors acknowledge the curriculum relevance of temporality in the development of historical understanding, they adopt highly individualised styles which often result in vague and ineffectual references to it, though some exceptions were also noted. I conclude that many textbooks are agnostic on temporality.

Another key implication of the sociocultural perspective is that due recognition must be afforded to the myriad socially-constructed influences on children's emerging temporal ways of knowing. My study unequivocally identified 6 different influences in the qualitative interviews conducted with children, as outlined in Figure 19, though interestingly, I noted that related academic studies, specific to temporality, were difficult to locate. Drawing on the more general social constructivist theories of learning, the individual nature of the emergence of temporal cognition becomes clear. Evidently, children acquire language and a sense of time at an individual pace, influenced by their lived experiences. One implication for curriculum and pedagogy is that greater credence must be given to the provision of learning experiences that are influenced by, and embedded in, the life world of the child. A further implication is the need for better alignment of the language and content knowledge of the curriculum with the developmental readiness of the child. Yet, it is recognised that there can be a developmental mismatch between what the child is socialised into and what is presented in the textbook. My study provides clear evidence (chapter 4) that history textbooks give little or no credence to the sociocultural influences. Likewise, they do not take cognisance of such individual assimilation of temporal concepts: instances abound of adult constructions of time being imposed through the texts, in the form of incomprehensible timelines, complex narratives and often incoherent content.

2.5.5: History in a knowledge hierarchy

Given the issue of under elaboration that have been identified, as well as the persistence of knowledge hierarchies (Goodson, 1993), it is important to reflect on how they impact not only on approaches to temporality, but on the broader history curriculum. In this knowledge order, history can be deemed the poor relation, and temporality can be seen as even poorer. Direct evidence for this claim is witnessed in changes introduced in a new Framework for the

Junior Cycle syllabus in Ireland, which is to be introduced in schools on a phased basis from 2014. The NCCA describe it as "currently undergoing a rebalancing process" (p. 3), but the impact is that history will no longer be a compulsory school subject. At present, over half the schools offer it as a manditory subject, but up to 90% of children study it at Junior Cycle level. Thus, while history was the fifth most popular elective at junior cycle level in 2012 (DES, 2012), the current "rebalancing" offers history as a short course only, with implications for the status of the subject at all levels. Interestingly, in England, history is about to be reintroduce as a compulsory subject, though it had been removed in recent years. English and Irish remain as compulsory subjects on the Irish syllabus, while curriculum planners and policy developers continue to build on the utilitarian STEM agenda (Science, Technology, Engineering and Mathematics), with a two-fold objective: increase the proficiency of all students in STEM, while increasing the number of students and professionals who pursue related advanced studies and careers.

Goodson's theories (1993) relating to the persistence of knowledge hierarchies is of seminal interest in this context. He highlights how subjects can be viewed as having high or low status at any given time in a society, depending on how valuable their knowledge is deemed to be. He considers curriculum development to be highly influenced by such a hierarchy and he argues that subjects gain and maintain academic and intellectual respectability in a context of an ever-changing information and skill base, reflecting what society deems important.

2.5.6: Aligning the intended, enacted and assessed curriculum

The pioneering work of Porter et al. (2002, 2004, 2011), distinguished between three types of curricula - the intended, enacted and assessed curricula of a school. Their theories examined the level of alignment that exists between them, and they are explored here for the interesting

perspectives they provide in undertaking an examination of how the history curriculum of the Irish primary school is being implemented. In particular, they offer insights into the potentially influential role of textbooks in the process of curriculum implementation, a point of key relevance in the examination and critique of history textbooks and workbooks undertaken later in chapter 4 of this study. Their theory is summarised in Figure 8 below.

Figure 8: Alignment of the intended, enacted and assessed curriculum in history (adapted from the theories of Porter et al., 2011)
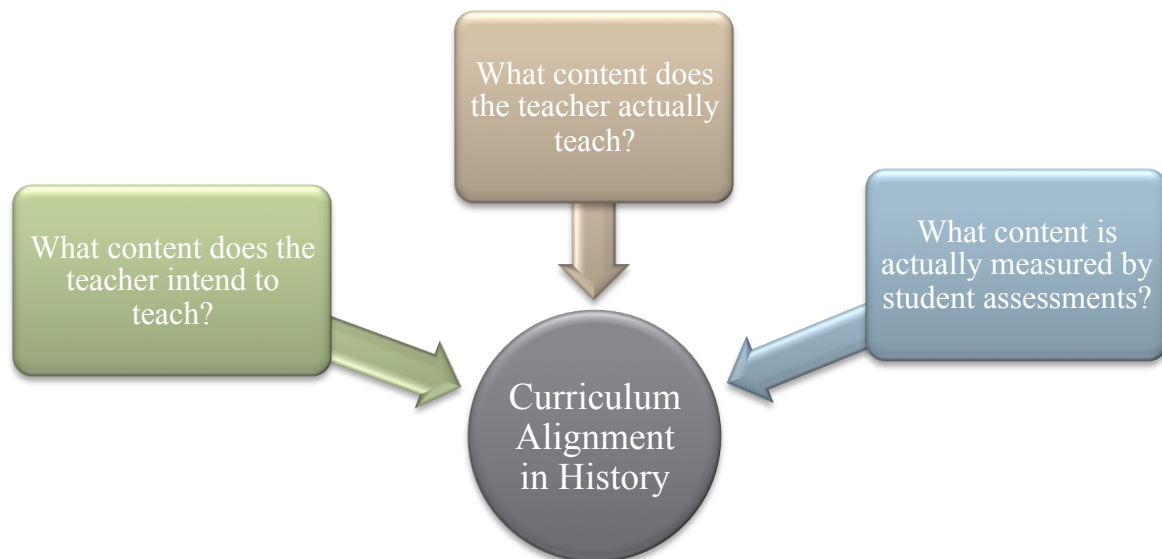
They describe the "intended" curriculum as being set out in the content standards for a particular subject and grade level. They distinguish between this and the actual content of instruction delivered by classroom teachers, which they describe as the "enacted" curriculum, while the content measured by student assessments represents the "assessed" curriculum. The research undertaken by Cohen (1990) supports this theory and has shown that while teachers may understand what content is required and believe they are teaching that content, in fact, they may not be doing so.

The researchers engaged in a collaborative undertaking to develop a systematic, efficient method of collecting, analysing and reporting data on curriculum content and instructional practices across a number of states in the USA and this became known as the "Surveys of Enacted Curriculum (SEC)" project (1998). They offer tools for measuring the content of instruction, the content of instructional materials, and the alignment between these.

They claim that

> … teachers, as they interact with students, are the ultimate arbiters of what is taught and how it is taught. They make decisions about how much time to allocate to a particular school subject, what topics to cover, when and in what order, to what standards of achievement, and to which students (p. 3).

According to Schwille et al. (1986), these decisions and their implementation define the content of instruction. They argue that, in making these decisions, teachers receive advice and support from a variety of sources. They point to the level of reliance by some teachers on teaching "what is in the textbook" (p. 81) and they draw on the work of Floden et al. (1981) to conclude that teachers teach what is tested. They make an interesting distinction between these influences and what policymakers hope teachers teach, that is, what is described in content standards.

Blank (2002) argues for a better alignment of the class-based instruction, the curriculum content and the manner in which it is assessed. He makes an interesting distinction between instruction that is independent of test results, and that which can be influenced by it. In the latter model, the teacher gears the instruction towards the test. In particular, he highlights the value of utilising content analyses of textbooks as a technique to assess the breadth and the depth of the "intended" curriculum.

The outcomes of this alignment research offer an interesting perspective from which to gauge the degree to which the history textbooks of the Irish primary school reflect the intended curriculum, as set out by the NCCA and the Department of Education in 1991. The paucity of research in this regard in the intervening years leads to a concern that if any such non-alignment exists, it is not being detected and not being dealt with. This issue will be examined in chapter 4.

2.5.7: Conclusion

Arising from an in-depth examination of curriculum provision for temporality, this chapter suggest a potential need for a reorientation, at both curriculum and pedagogical levels, of how temporal ways of knowing can be fostered, to take cognisance of the now well-established cognitive-developmental and sociocultural influences. Divergences and convergences between the English and Irish curriculum requirements and ideologies have been identified, and certain shortcomings have been documented in each. It is evident that similar limitations can be detected in the separate history curricula of Wales, Scotland and Northern Ireland, though no scholarly reviews could be located which document and challenge their extant approaches. Given this critique, it is clear that a more systemic reappraisal is required of approaches to temporality in history curricula, in order to reflect current scholarly opinion. It is envisaged that such a process can be imbued by the theories espoused in this study, and augmented by claims emanating from the three inter-related research strands, as outlined in chapters 4, 5 and 6 of my work.

2.6: Making the diversity of temporal cognition explicit: towards temporal ways of knowing?

2.6.0: Introduction

In this section, I examine the literature which addresses the specific complex, multifarious facets of temporal learning, as well as the key challenges inherent in fostering children's wider historical learning in its deepest form, through the medium of the history curriculum. I use the term "deeper time" to delineate how such a connection can be made with the past in a deeper form. In doing so, I am not addressing the overt role of the mathematics or language curriculum in this process. I chart the progressive nature of such cognition, mindful of the key influence of the child's cultural experience in laying foundations for such learning. Such an exposition cuts to the core of developing an understanding of the specific processes inherent in children's development of temporal cognition, and it provides a framework from which to undertake a methodical, comprehensive model for intervention in the classroom. This contrasts with the under elaborated nature of the guidelines offered in the curriculum, as examined in section 2.5 above.

2.6.1: "Developing a deeper sense of time": Connecting with the past in its deepest form

> In probing my childhood (which is the next best thing to probing one's eternity), I see the awakening of consciousness as a series of spaced flashes, with the intervals between them gradually diminishing until bright blocks of perception are formed, affording memory a slippery hold (Nabokov, 1989, pp. 20-21).

This section of my study examines literature relating to a wide range of relevant research on temporal cognition, conducted with children of preschool and school-going age. It addresses the emergence of children's understandings of various temporal concepts and examines a variety of emerging skills associated with such learning. Specifically, this section addresses

7 elements of temporality to be acquired and appropriated by the school-going child as a prerequisite to a deep and flexible historical understanding. As delineated in section 2.4.0 above, each of these elements is considered for their significance in providing a theoretical basis for the presentation and analysis of data acquired in strand 3 of the research, the school-based qualitative interviews conducted with children. Likewise, it will inform and direct the claims emanating from the study of children's narratives about past events.

These elements are represented diagrammatically in Figure 9 below:

Figure 9: Elements of children's temporal cognition
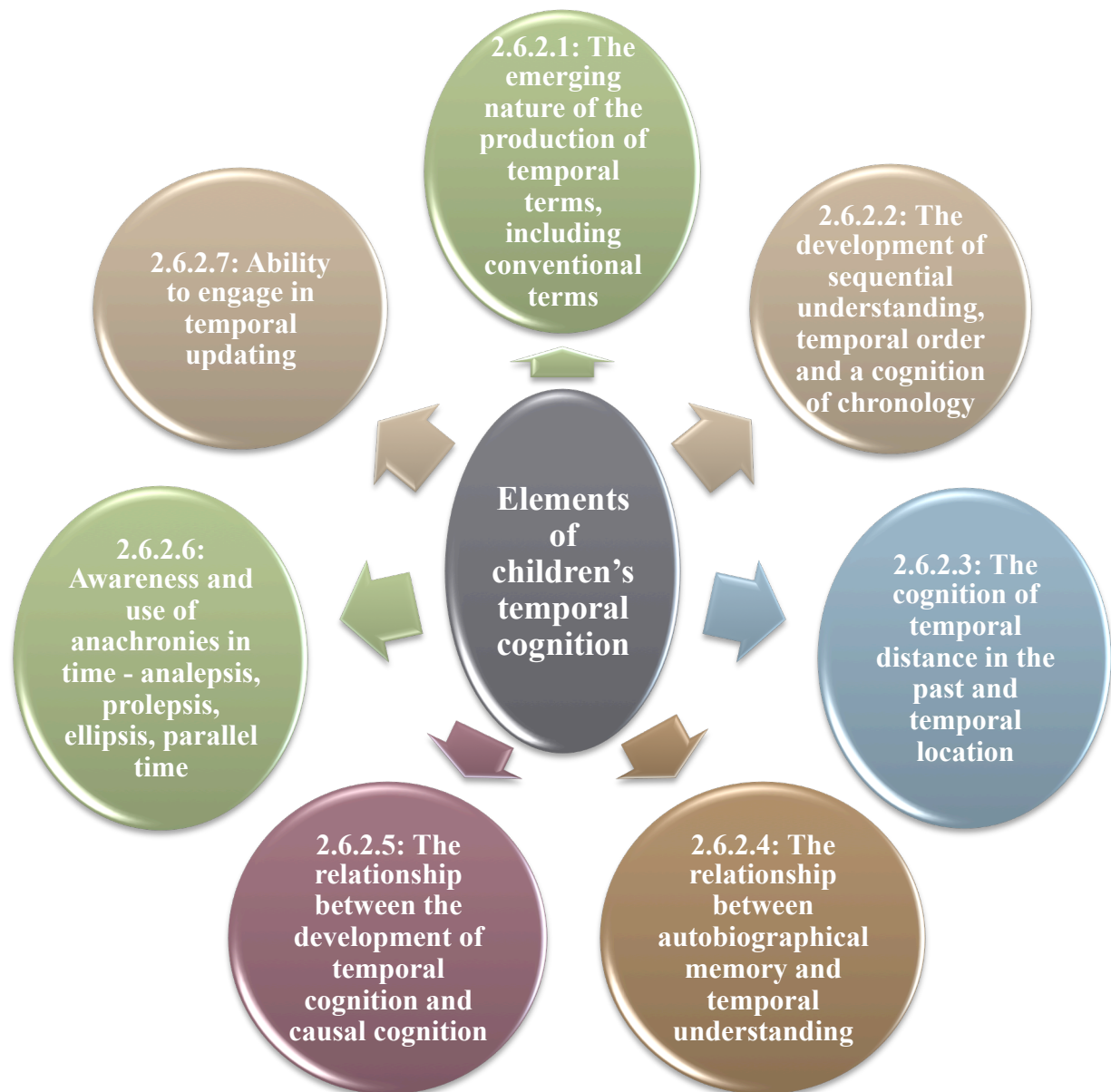
2.6.1.1: The emerging nature of the production of temporal terms, including conventional terms

A number of experimental approaches are now examined which have been used by researchers to specify children's ability to appropriately interpret and use temporal terms. In reviewing the literature in this regard, it has become apparent that while the range of related studies is prolific, it is also disparate and no unified coherent account could be located of the emergence of temporal language production. A diverse range of individual tasks have been used with a variety of specific age-groups to explore children's acquisition and use of temporal terms, such as, reporting experiences from specific events in the past, describing events in the current time and reading/interpreting displays of time. Yet, there appears to be little unification of these tasks and, thus, a less cohesive understanding of how temporal words are understood or used.

Early studies of children's talk demonstrate that from about 18 months to 2 years, toddlers can engage in language about events that happened in the past, or will happen in the future (Antinucci and Miller, 1976). Words relating to time in the present were first described by this age cohort, next words relating to future time and later, words relating to time in the past. This is corroborated by the recent research of Busby Grant and Suddendorf (2010), who found evidence that young children did not use words such as "yesterday" and "tomorrow" before the age of 4/5 years. Thus, it would appear that while children below the age of 2 years display an ability to discuss events relating to the past, an improvement in their understanding of temporal terms actually takes place from 2 to 4 years. The writers draw on the work of Hamond and Fivush (1991) to support this evidence, who demonstrating that during this time, children can provide more elaborate, detailed accounts of present, future and past events. The work of Busby Grant and Suddendorf (2010) provides interesting data about

pre-school children's production of a broad range of temporal terms. The findings are

summarised in Table 1 below.

Table 1: Children's talk about time: parental judgements of the production of temporal terms (Source: Busby Grant, J. & Suddendorf, T., 2010, p. 89)

Term	3-year-olds' production of term	4-year-olds' production of term	5-year-olds' production of term
Today	88% (28)	93% (28)	100% (31)
Tomorrow	81% (26)	87% (26)	97% (30)
Later	88% (28)	87% (26)	97% (30)
Yesterday	66% (21)	83% (25)	81% (25)
Soon	72% (23)	90% (27)	97% (30)
Now	88% (28)	87% (26)	97% (29)
After	84% (27)	100% (30)	100% (31)
Before	59% (19)	87% (26)	97% (30)
Next week	47% (15)	80% (24)	84% (26)
Last week	42% (13)	62% (18)	77% (24)
Months	16% (5)	70% (21)	81% (25)
Days week	78% (25)	93% (27)	100% (31)
Hours	34% (11)	57% (17)	81% (25)
Minutes	59% (19)	97% (29)	90% (28)
When little	78% (25)	100% (30)	97% (30)
When big	84% (27)	93% (28)	97% (30)
Today	88% (28)	93% (28)	100% (31)
Tomorrow	81% (26)	87% (26)	97% (30)
Later	88% (28)	87% (26)	97% (30)
Yesterday	66% (21)	83% (25)	81% (25)
Soon	72% (23)	90% (27)	97% (30)
Now	88% (28)	87% (26)	97% (29)
After	84% (27)	100% (30)	100% (31)
Before	59% (19)	87% (26)	97% (30)

Reflecting the findings of Tartas (2001) and Friedman (1986), as outlined below, the writers

conclude that actual use and command of temporal terms does not follow a predictable

pattern, and different words are commonly used at different stages and ages.

The writers collected data from parents relating to the use by their toddlers of 18 time-related words. Terms that relate to the present tend to be used correctly by children aged 3 years and during preschool years, there is a discernible increase in children's use of such terms (for example, "now", "today", "soon"), attributable not just to their increase store of language generally, but to their improved repertoire of time-related words also. The writers claim that terms that represented time beyond the here-and-now were acquired later, and were deemed more challenging for children, such as "tomorrow", "yesterday", etc.

Friedman (1986, 1991) conducted extensive research into children's comprehension of other conventional temporal terms, such "in a minute", "hours ago", the months of the year, days of the week, "next week", and "last week". The findings suggest that during preschool years, children's language was devoid of these terms and their emergence occurred thereafter, with increased levels of accuracy. Thus, 4-year-old children were unable to name the specific month in which a recent occurrence had happened, yet two years later, children could accurately do so. Yet, children aged 7-8 years were challenged by the task of naming the days of the week (Friedman, 1986) that came before or after a particular event. In addition, tasks were designed to examine children's ability to read and manipulate clock displays (Friedman and Laycock, 1989). They found that deciphering digital time was less challenging for children than analogue time, the former emerging from the age of 6 years, with the latter emerging slowly over subsequent years.

Further, Waldron's (2003) study of 10 year old Irish children's spontaneous writings about the meaning of history provided clear evidence that the concept of time "dominated their definitions" (p. 78), with the majority making general references to time ('the past', 'years ago', 'long ago', etc.), while 1 in 5 children used conventional terms ('century', 'decade',

etc.). In addition, 12 per cent of children referred to historic periods, while only 6 per cent cited dates. Yet, 18 per cent exhibited a definite sense of time as a continuum in their writings.

2.6.1.2: Children's cognition of sequential understanding, temporal order and chronology

Literature abounds on the developmental process by which children acquire and build upon their ability to sequence, and while there is a consensus on the time period involved, there are divergent views on an explanation of the developmental process that underpin such development. Nelson and Gruendel (1981) cite children's familiarity with particular occurrences as being a significant factor in the development of the skill, though this can be simplistic and devoid of any wider understanding of why things happened when they did. The work of Fenson and Ramsay (1980) proposes that increased cognitive development at the end of the second year allows children to make connections between isolated occurrences. However, Case et al. (1986) argue that this skill can be attributed to children's improved ability to process information.

Brown et al. (1975) conducted research into the sequencing ability of older children (aged 4 to 7 years). Using three sets of pictures, they presented them to children in three ways, one in meaningful and logical order, one scrambled and one in reverse order. They established that children could successfully reproduce pictures in the logical order, their performance on the scrambled sequence was poorer, while their reproduction of the reversed order sequence was poorest. Mandler (1980) reported similar results from children's story recall. When presented with interweaving story lines, children tended to recall them in simplistic, traditional order, rather than as presented in input order.

O' Connell and Gerard (1985) conducted a study with young children (aged 20 - 36 months) to examine their ability to correctly recall events that they had previously experienced in the correct sequence. They contend that knowing *that* certain things go together and knowing *how* they do, involve different cognitive processes, which can only be combined from around 24 months onwards. So, up to 20 months old, children displayed little ability to sequence, yet this improved to a rudimentary level by the age of 2 years. By the age of 3, all children demonstrated a temporal ordering ability.

McCall, Parke and Kavanaugh (1977) investigated infants' ability to imitate and found that 28-month-olds' ability to sequence ordered events is far better established than that of 24 - month old children, while 36-month-olds were quite good at reproducing a sequence. In sharp contrast to the Piagetian theory examined in section 2.3 above, they displayed an ability to reverse the order of events at the age of 3 and they could group actions in a meaningful way. They conclude that children appear to recognise that certain actions belong together, before they demonstrate an ability to order these actions.

2.6.1.3: Children's cognition of temporal distance in the past and temporal location

Another key facet of children's temporal understanding relates to the manner in which children acquire understanding of temporal distance in the past and temporal locations. The extensive work of Friedman (1991) provides noteworthy perspectives in this regard, and he defines temporal distance as "the amount of time that has elapsed since the event", whereas temporal location refers to "…the links made between an event and a point in some autonomous time pattern" (p. 139). Friedman points to a key distinction between children's

ability to understand how long ago an event happened in the past, relative to some more recent event, and their ability to locate an event in time, using anchors such as a date.

His study investigated the ability of children aged 4 to 9 years to retrieve memories from specific temporal locations in the past, including yesterday, last weekend, last summer, as well as different holidays from the past year. He found that even 4 and 5 year olds were able to produce accurate memories from nearly all of those times, and many children could recall memories that were specific to an occasion in question. His study, however, concludes that the ability to retrieve memories by temporal location does not imply that children understood where the location was, relative to one another. He deduces that it is not until 8 to 9 years that children could correctly order a set of locations from the past. Further, children from the 9 year old age group were not able to determine which of a pair of locations from the past year had happened in the more distant past.

Friedman (1991) tested the ability of 4, 6 and 8 year olds to recall the time period involved between a number of related events. Essentially, he was testing their ability to judge how recent specific events were, even though they had taken place 1 week and 7 weeks earlier. He also asked them to recall the time of day, day of the week, month and season of the year in which the older event had occurred. He found that children as young as 4 years were able to judge the relative recency of the two events and they could locate the older event by correctly naming the time of day.

The study also engaged children in estimating the exact timing of two past events, by naming the season, months, days of the week and time of day in which each occurred. Children aged 5 to 8 years were able to place events on different time scales. Friedman's study (1991, p. 153) goes on to generalise that children and adults both use similar cognitive structures to recall past events, as well as remember how recently they happened. Yet, he acknowledges that adolescents and adults can draw on the visual images that they have stored that accrue from their personal experiences to help them connect with and locate an event in the past. Children, clearly, have more limited experiences and mental images to draw on.

This study provides insights into the reconstructive nature of how past events can be located in time. Friedman (1991) distinguishes between two kinds of information that are required in this reconstruction: an ability to recall specific details that they associated with the particular event, while also having general time knowledge. He concludes that while four year olds could accurately recall information about the event in question, they did not have the specific temporal knowledge that 6 and 8 year olds had, such as days of the week, months and seasons.

Such a finding mirrors that of Tartas (2001), who examined the cognitive devices children used to locate events in time. Her findings demonstrate that the temporal location techniques children use vary over time and are heavily influenced by their school experience. The youngest (aged 4-5 years) compare the timing of one event with another in a more simplistic manner. Yet, older children draw on their repertoire of conventional time language to specifically locate such events in time, using details of hours, dates and months.

2.6.1.4: The relationship between autobiographical memory and temporal understanding

The relationship between temporal knowing and the manner in which we draw on our own personal memories of the past has been examined by Povinelli et al. (1996). Such use of "autobiographical memory" (p. 30), is, according to the writers, unlikely to emerge until 3 - 4 years of age. They claim that most people do not have genuine memories of events that happened prior to approximately 3 years of age. They caution against concluding from this proposal that young children do not have memories of events from the distant past. The work of Nelson (2004) appears to support this view. She defines the term as

> … an explicit memory of an event that occurred in a specific time and place in one's personal past (p. 3).

Conway and Rubin (1993) concur and make a clear distinction between the memory we might have of facts or other specific skill-related learning, as distinct from personal memory of events we actually experienced.

Nelson (2004) makes an interesting distinction between understanding what is happening in the present time and understanding beyond the temporal extension of the self, by connecting with personal experiences in the past. She points to the emerging nature of the memory and she sees this as a fluid process, continually being influenced by new learning to produce a more complex level of understanding of past events. Nelson points to the key influence of the sociocultural milieu on the child's emerging autobiographical memory, where the child's evolving experiences over time, as well as the varying contexts in which they are experienced, are highly influential.

2.6.1.5: The relationship between the development of temporal and causal cognition

The work of McCormack and Hoerl (2007) provides interesting insights into young children's ability to understand temporal events and causal relationships between them. They make a distinction between two types of reasoning that are important: temporal - causal reasoning (understanding the relationship between an event in time and its cause), as well as the more basic skill temporal updating (allowing new information to link with and influence existing information).

The writers (2007) conducted a series of four experiments with young children (aged 3 to 5 years) to examine whether they experienced difficulty with what they termed "temporal - causal reasoning". Using dolls, pictures and dolls houses, they asked children to physically locate objects in the doll's house, following verbal information regarding where they had been put. They concluded that 4-year-olds had difficulties using information about the order in which two events had occurred, to understand why the event is now as it is (e.g., Jack brushed his hair and put the brush into the locker. It is no longer on the table). This ability has been termed "temporal - causal reasoning" and it can be defined as the relationship that children perceive between events and their effect on subsequent events.

These findings reflect the earlier conclusions of Povinelli et al. (1996) which demonstrated that children aged 3 to 5 years can grasp the notion that events stem from one another as part of a causal "arrow of time – a flow of events leading up to and causally determining the present" (p. 29). Using similar techniques of investigation with puppets and other objects, they conducted a study of 4 – 5 year olds and concluded that once children have personally experienced two events, they can understand the time difference between them. They can also understand that other children can experience the same event at some other point in time.

According to the writers, the skill of temporal updating is more basic, involving the accommodation of new information to change and alter an existing understanding.

2.6.1.6: Awareness and use of anachronies in time, including parallel time

The complex nature of "anachronies" is understood to refer to jumps in time periods in the narration of a story. According to Genette's work on textual analysis (1980), the term can be defined as the "various types of discordances between the two orderings of story and narrative" (p. 36). He makes a distinction between anticipation and retrospection in relation to the narration of events, the former termed "prolepsis" and the latter "analepsis". He defines prolepsis as "any narrative manoeuver that consists of narrating or evoking in advance an event that will take place later" (p. 40), while the latter is defined "any evocation after the fact of an event that took place earlier than the point in the story where we are at any given moment" (p. 40). Barrow (1987) concurs, characterising the term as "time twisting backwards and forwards on itself through a combination of analepsis (a backwards leap in time) and prolepsis (a forward leap)" (p. 3). Thus, while analepsis is associated with exposition, simultaneity, digression or delaying in the narration of a story, prolepsis is associated with anticipation or the provision of advance notice, whether immediate or long range.

A further category of such discrepancies refers to a sudden jump from one period of time in a story to another, named "ellipsis", which can be understood as a gap in time, where there is discontinuity between one event and another. An additional related term, "parallel time", can be identified as having relevance for this study. The term refers to two parallel sets of events in a story that may intersect with one another at some point during the narration. Holt (2001)

cites Fox (1993) in arguing that such relationships are complex and the child must negotiate the intricacies of understanding how two different events can be happening at the same time in a story, while they sometimes overlap and impact on one another.

2.6.1.7: Ability to engage in temporal updating

The term "temporal updating" refers to the manner in which a child's understanding can be altered and influenced by new thinking, arising from new information that they have acquired, leading to an upgrading of their overall cognition of the situation or event in question.   Thornton and Vukelich's theory (1988), emanating from the developmental historical view, is recalled here in their assertion that some time-related 'concepts are mastered, others are added and old concepts may generate new meaning later in life. So it is with understanding time and history' (p. 80).

Applied to temporal language, this development could be reflected in a child's ability to experiment with temporal terms from a young age, often in a spontaneous manner, with many inaccuracies and discrepancies evident. Hoodless (1998) points to the value of children having opportunities for such engagement, and she cites the benefits of using story as a medium for doing so. As the child encounters opportunities for the development of such language, they update their linguistic capabilities, while also being provided with opportunities for developing and extending their conceptual understanding. Thus, for example, a child may encounter conventional temporal terms (e.g. "century"), may not necessarily understand or apply the term correctly, but may update their conceptual understanding as they interact with the text, synthesising old and new related learning.

2.6.2: Conclusion

The literature examined in this section synthesises insights into the complexities and nuances inherent in developing temporal ways of knowing, drawing on inter-related literatures in learning, curriculum, culture and cognition. In doing so, it both builds upon and challenges contemporary framings of temporal ways of knowing in curriculum history. In terms of learning, it draws on both the cognitive-developmental and sociocultural views to frame how "deeper time" (i.e. understanding backwards in time in ways that are both deep and flexible) can be fostered in children. Whereas the cognitive-developmental approach emphasises the developmental construction by the child of a range of cognitive encounters and understandings of time in the past, the sociocultural model highlights the social and cultural influences on this route to temporal understanding.

In terms of curriculum, the chapter identified and challenged what is perceived to be an under-elaborated framing of temporality in current curriculum documents, and argues for a curriculum review to give due credence to the comprehensive range of both cognitive-developmental and sociocultural influences on children's temporal ways of knowing. Implications for classroom practice and the professional development of teachers are examined, as well as the design of history textbooks and other resources. In terms of culture, the study draws on sociocultural theories of learning to examine the influence of cultural mediation on children's temporal ways of knowing. The embeddedness of the child's learning in the myriad social and cultural interactions in his life world are established, with a recognition of children's diverse experiences in coming to understand the story of the past. Such influences are reflected in the data presented from three recent Irish studies.

In terms of cognition, the literature identifies the highly complex, developmental trajectory of temporal learning that takes place from a very young age in a child. The key influence of a supportive environment in scaffolding such learning opportunities is outlined, beginning with the facilitation of basic language development opportunities, and leading to the more highly complex skills of synthesising the new learning, leading to deeper understanding.

In summary, this chapter charts the interplay of learning, culture, curriculum and cognition that needs to emerge if the child is to the successfully negotiate and engage with the temporal aspects of the primary history curriculum. Crucially, in doing so, it underscores the need to reconceptualise the manner in which temporal ways of knowing can be fostered at both curriculum and pedagogical levels.

Chapter 3:

Research Methodology

3.0: Introduction

The centrality of temporal cognition in the development of historical understanding is established in chapter 1 of this study and supported by pertinent research in the literature review above. The intricate, multi-faceted, developmental nature of such cognition is traced and cognitive-developmental, as well as sociocultural influences on a child's learning are determined. The under-elaborated nature of the approach of the Irish primary history curriculum in addressing and fostering the development of temporal cognition is delineated; likewise, the lack of any meaningful evaluation of school provision for this area is established.

This study examines how a re-conceptualisation of approaches to temporal ways of knowing, emanating from an extensive literature base, can lead to a more informed discussion on how deeper historical learning can be fostered and valued. This examination is supported by three components of research into children's temporal cognition, using interrelated methods. The research methodology applied to each is now outlined, as they aim to address the research questions established at the outset:

1. What opportunities are available for children to develop temporal ways of knowing?

2. What status does temporality have in the primary curriculum in the promotion of historical understanding?

3. What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding children's temporal ways of knowing?

3.1: Overview of methodological approaches

Different methodological approaches were adopted in each strand, as outlined in Figure 10 below.

Figure 10: Three research strands relating to children's temporal cognition

From the outset, I was mindful of Brueggemann's (1996) assertion that

> rhetoric, politics and the personal are very much with us; they are with us as we do fieldwork, as we write it down, write it up, and as we represent ourselves and the 'others' we study in this writing (p. 19).

Thus, in presenting the accrued data, as well as the claims emanating from it, I have identified a number of orienting principles which permeate each of the inter-related research strands. I will revert to each of these as I identify them in the remaining chapters:

1. the policy and power of the curriculum (Goodson, 1993) . This can be evidenced in two spheres, in the agenda that is set, as well as the manner in which children's voices are regarded or disregarded;

2. the relative neglect and marginalisation of temporality, evident in typically implicit rather than explicit focus;

3. the embeddedness of children's temporal ways of knowing in their life world;

4. the embeddedness, subjectivity and mix of professional experiences that I bring to this study as a researcher.

5. the developmental, diversely experienced, progressive nature of temporal cognition.

The principles are denoted in Figure 11 below:

Figure 11: Orienting principles permeating the research strands of this study
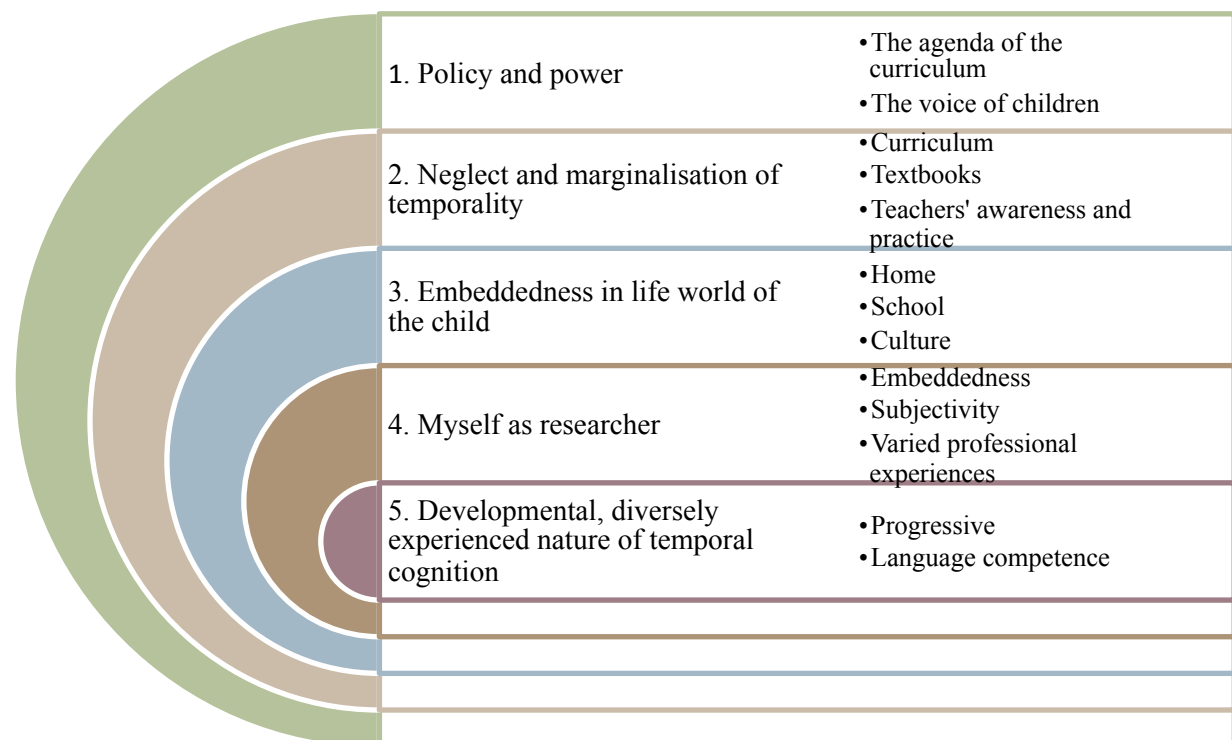
In addition, I am utilising the interpretative force of the academic writings of a number of the seminal researchers in this area, as outlined in chapter 2: Hoodless, Hodkinson, Wineburg, Friedman, Hirschfeld and Haydn. In theorising the remaining chapters, I identify convergences and divergences between the findings of these studies and my own. In doing so, I am integrating the insights derived from this previous research, and particularly relating it to the Irish context.

Strand 1 provides a content analysis of history textbooks in their facilitation of temporal cognition, using a unique rubric designed to glean pertinent information. Informed by the theories of curriculum enactment (Porter et al., 2011, section 2.5.6), content analysis (Strahan and Herlihy, 1985) and the establishment of 'frameworks of the past' (Dawson, 2004, Stow and Haydn, 2000), a comprehensive quantitative review of Irish primary school history textbooks and workbooks was undertaken, to determine their alignment between the intended and the enacted curriculum. Thus, all the texts that are currently available to teachers (n = 14) were comprehensively examined at three class levels, Junior Infants, Third and Sixth class. The review sought to establish if due recognition is given to the centrality of temporal cognition in the programmes of learning they provide, and if related curriculum guidelines and objectives are reflected therein.

In Strand 2, my study examines student teachers' experiences of being apprenticed into the prevailing culture for teaching history at primary level, integrating mixed qualitative and quantitative methods of research (Berends, 2006). Data was acquired from a survey of 150 student teachers, to determine the nature and extent of their practices of using history textbooks and workbooks while they were on school placements. Their experiences are examined for the interesting insights they offer into the construction of time that is culturally

available to them. As novice teachers, they experience a social construction that is inter-generational, among teachers with varying degrees of experience, and they operate in classrooms where there is an established practice of using history textbooks and workbooks, to differing extents. The study examines how they navigate this social construction in developing children's temporal cognition. However, it is important to note the limitations of the survey. It was beyond its scope to determine the practices of the class teachers and the extent of their use of textbooks.

In addition, the survey provides insights into the level of reliance by student teachers on such material, the nature of their use, as well as factors which impinge upon their selection or rejection. Further, data is presented on the level of confidence expressed by student teachers in relation to their own knowledge base in history, whether they feel equipped and confident to teach history as a subject, and whether their own experiences of learning history at primary level were positive or negative. Such factors are influential in examining how they are socialised into the prevailing approach to history teaching within the school.

In strand 3, a series of school-based, qualitative interviews were undertaken to examine how children conceptualise time; this is approached from two perspectives, reflecting the primary focus of sections 2.3 and 2.4 of the literature review: the cognitive-developmental and the sociocultural. The former addresses nine aspects of children's temporal cognition that were identified in the interviews, while the latter focuses on a number of significant cultural influences on temporality that emerged. The data was gathered with 12 children in two schools, at the same three class levels utilised in strand 1 above, to determine the children's sense of temporality over the period of their primary schooling (orienting principle 5, figure 11).

3.2: Strand 1 - A content analysis of the provision for temporality in Irish history textbooks

3.2.1: Content analysis as a research tool

In this strand, an extensive content analysis of a selection of history textbooks and workbooks is undertaken to determine the nature and extent of curriculum provision for the development of temporal cognition. A theoretical framework for undertaking content analysis is now outlined.

Cole (1988) claims that the term "content analysis" is in excess of 70 years old, and was introduced by Berelson and Lazarsfeld (1948) who undertook the first classification of this approach. As cited by Cole, they define it as an

> analysis of the manifest and latent content of a body of communicated material through classification, tabulation and evaluation of its key symbols and themes in order to ascertain its meaning and probable effect" (p. 8).

Cole (1988) describes content analysis as a method of analysing a variety of communication messages, be they oral, aural or visual in nature. Krippendorff (1980) concurs, stating that content analysis is

> a research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action" (p. 19).

Downe-Wamboldt (1992) and Sandelowski (1993) define content analysis as a systematic method of analysing documents which enables a theoretical testing to be undertaken, leading to better understanding of the data.

The related work of Strahan and Herlihy (1995) is selected for review here, as it is particularly pertinent to my study, in its analysis of social studies textbook content. Reverting to the fourth orienting principle delineated in Figure 11 above, I am also interested

in its relevance to my work as a teacher educator. Reflecting the recommendation of Krippendorff above, Strahan and Herlihy designed an interesting content analysis model and an accompanying guide, which they deem suitable for use by teacher educators in heightening student teachers' awareness of the organisation of textbooks and their potential in conveying academic knowledge. In their view, a prerequisite to the effective use of a textbook is the need for both the teacher and learner to be aware of the "…direction, focus, organization and priorities of the content" (p. 438). To help students do this, the teacher's role is to prepare a content analysis of each chapter which can enhance instructional design. This involves organising and sorting the material, and establishing priorities about the information, in keeping with the goals of the class and the use of the available time. Essentially, it facilitates the development of a sequence, the mode of instruction and the emphasis to be developed from the chapter of the textbook. At the end of the content analysis,

> "a teacher has identified the key content, established time allocations, identified key concepts and generalisation and listed essential information (p. 439).

Weaknesses or gaps in the content can then be identified and the text can be supplemented with material and resources that provide enrichment, helping to expand the key ideas and concepts not fully explored in the text.

Este and Vaughan (1978) concur, stating that an effective content reading lesson "bridges the gap between what a student knows and what he or she needs to know" (p. 44). They acknowledge that there is often a difference between textbook authors' assumptions about students' vocabulary, skill proficiency and conceptual understanding, and students' actual achievement in those areas. This recognition echoes the theories of Valverde et al. (2002,

section 2.2.11 above), regarding the distinction to be made between the intended and the enacted curriculum of the school.

Strahan and Herlihy's (1995) content analysis training model for teacher educators adopts a four-step approach, integrating training in analytical skills with first-hand reading experiences. Once a teacher engages in this content and reading analysis, a number of additional techniques become relevant. These include

1. the use of pre-reading procedures as organisers, e.g., reading the headings on paragraphs to help outline and summarise the content;

2. the use of non-reading material such as visual stimuli in the chapters – maps, charts, timelines, graphs, pictures, cartoons, etc.

The model is presented in Figure 12 below.

Figure 12: A textbook content analysis training model for teacher educators (source: Strahan and Herlihy, 1995).
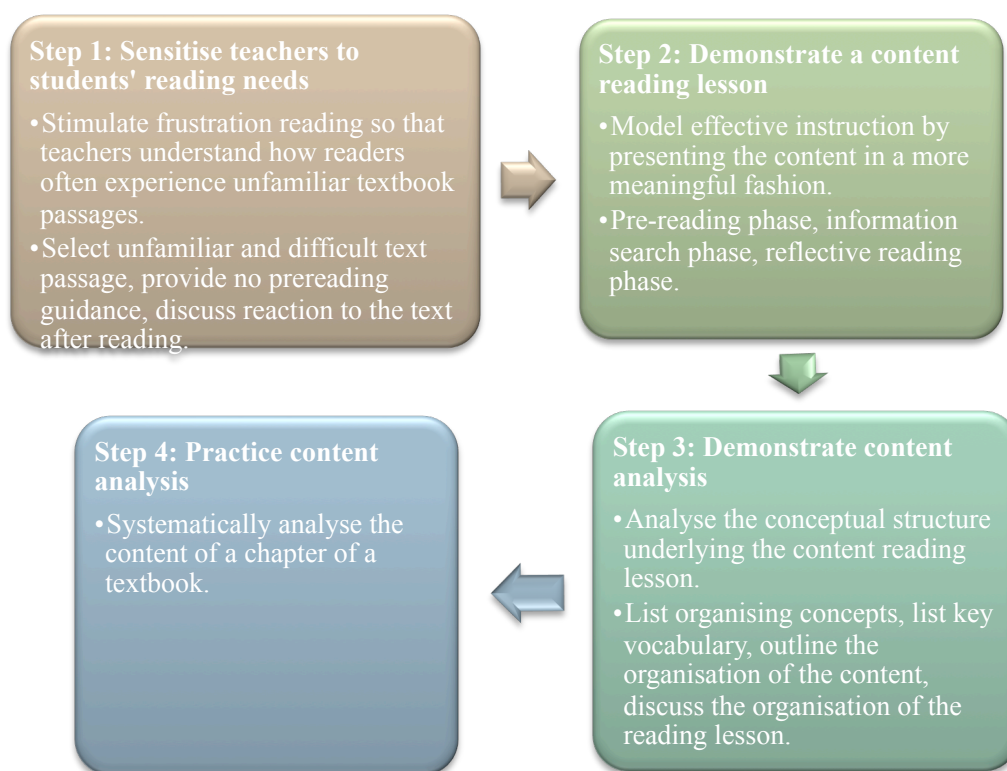
In addition, Strahan and Herlihy (1995) provide a detailed content analysis guide, elaborating on step 4 of their training model. It endeavours to provide a systematic procedure for helping teachers organise ideas for guided instruction. Its key components resemble what Dey (1993) specifies as the key questions to be asked when undertaking the analytical process of reading the data: "Who is telling? Where is this happening? When did it happen? What is happening? Why?" (p. 86).

These components are summarised in figure 13 below.

Figure 13: Content analysis guide (Source: Strahan and Herlihy, 1995)
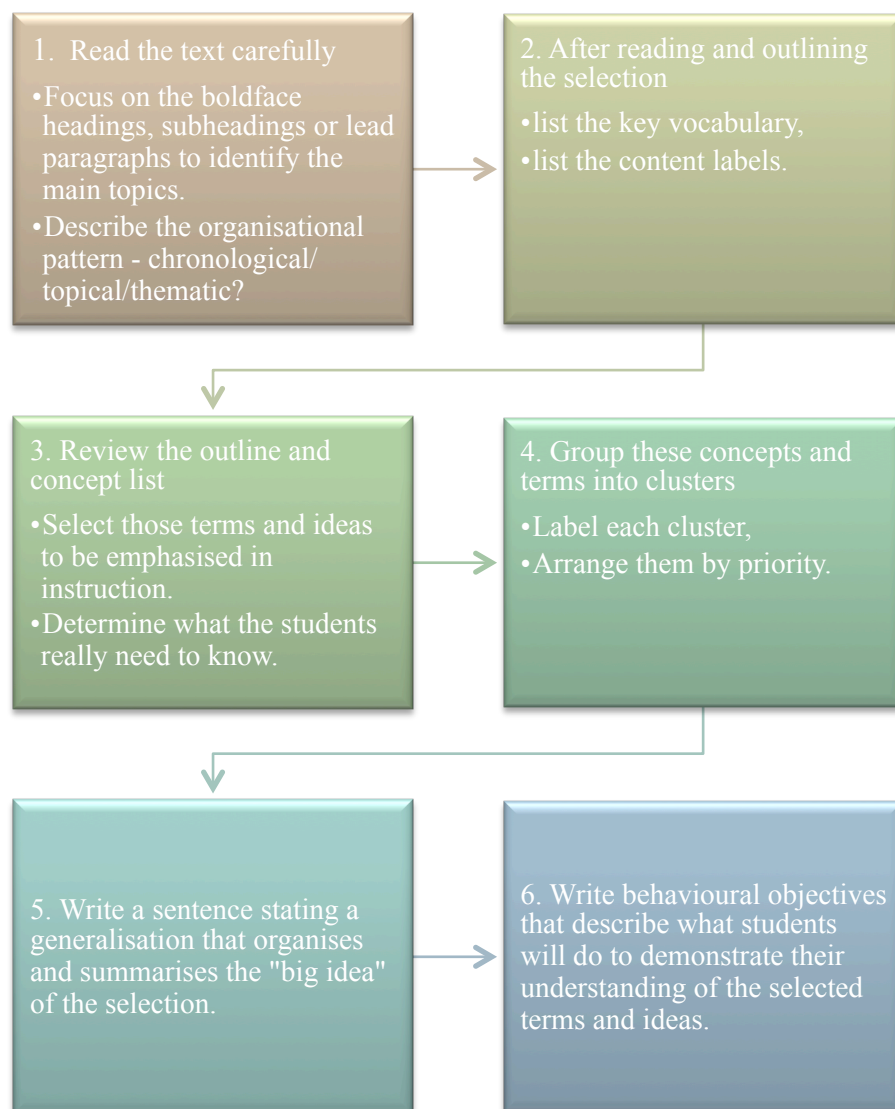
This approach to the content analysis of textbooks has been summarised by the writers as a fact/concept/generalisation hierarchy, which effectively distinguishes between what is essential, what is supportive, what is informational and what is an example. It can facilitate teachers to use the text as an aid, interacting dynamically with it, rather than becoming its servant by following its content in a tedious, passive, line-by-line fashion.

3.2.2: Rationale for a content analysis of history textbooks

Textbooks have been earlier described (section 2.2.8 above) as the quintessential mediating tools which embody the guiding principles of the curriculum, and reflect them in the programme of study they offer to the school. In addressing the first of my research questions, this strand seeks to establish how the history curriculum contributes to children's temporal ways of knowing, as mediated by textbooks. It examines the nature, frequency and quality of opportunities provided for the development of children's temporal cognition through this medium.

Strahan and Herlihy's (1995) model establishes the imperative that such textual materials would provide the prerequisite focused, purposeful opportunities for the development and consolidation of all the key skills and concepts (p. 438). Applying this to the primary school history curriculum, the requirement is that clear, precise guidance would be forthcoming on how temporal cognition is to be approached. Their model provides a construction, from which a distinctive rubric has been designed for this study, which facilitates an examination of the effectiveness of history textbooks in addressing temporal cognition. It was necessary to create a unique rubric because no other existing model of content analysis could be located that suited the specific requirements of this study.

In addition, Stow and Haydn's theories (2001) regarding the establishment for the child of a "framework of the past" were seminal in this context, especially their emphatic assertion that such scaffolding does not happen by accident; rather it needs to be concertedly planned and nurtured through the curriculum. While such an assertion denies the embeddedness of such learning in the life world of the child (orienting principle 3, figure 11) and sociocultural influences beyond the overt curriculum, it underscores the developmental nature of facilitating temporal ways of knowing (orienting principle 5, figure 11).

The approach I adopted in the content analysis of the textbooks is summarised in figure 14 below.

Figure 14: A content analysis of the provision for temporality in Irish history textbooks.
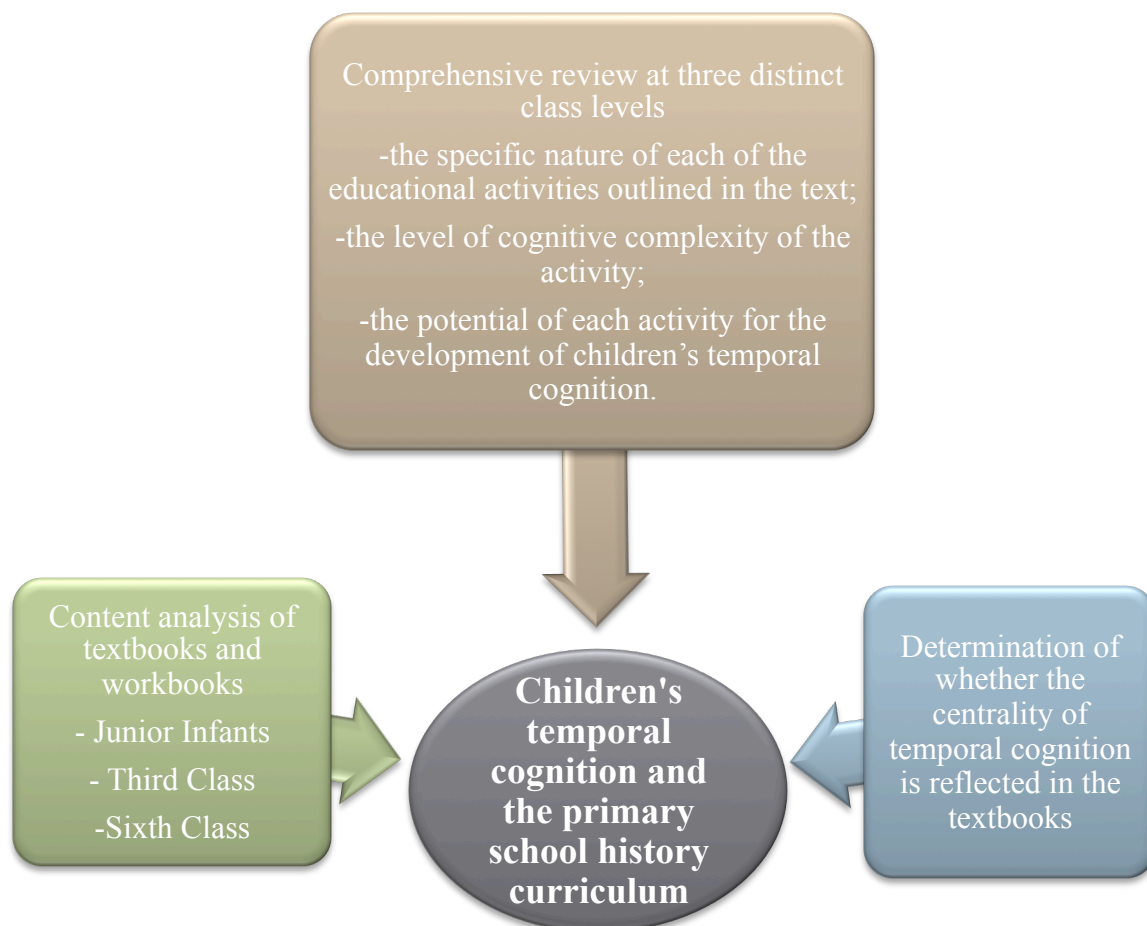
Stow and Haydn's (2000) theories also influenced the categorisation I used in establishing the chosen content analysis model for the textbook review. Essentially, it enabled me to consider temporal cognition within the history curriculum in a new framework. Their four-part classification broadly reflects the theories of Thornton and Vukelich (1988) who assert the developmental nature of understanding time (p. 75): "Temporal development is normally developmental …youngsters gradually make more systematic and sequential time distinctions as they mature". These constructs were insightful in their specification of the broad milestones that would be attained at particular junctures. I applied these theories to the Irish history curriculum, particularly to the three age levels I selected for the study.

Within this framework, the child would be expected to identify and categorise pictures, especially relating to time-dating systems (e.g. calendar) by the end of the Level 1 programme (Senior Infant level), while having a restricted level of time-related vocabulary. This objective corresponds with Stow and Haydn's (2000) T1 classification. By third class, the child would be expected to have an in-depth knowledge of certain key topics, as established in the menu curriculum, while being capable of locating them within the context of a broader timeframe (e.g. Brian Boru and the Battle of Clontarf in the context of the Viking period in Ireland). This reflects Stow and Haydn's (2000) T2 categorisation. The basis for "Deep Time", the T3 and T4 categorisations, are likely to be evident at sixth class level, with the child expected to conceptualise what Friedman (1991) termed "temporal distance in the past" (section 2.5.2.3), and be capable of temporally locating "…the links made between an event and a point in some autonomous time pattern" (p. 139).

This framework provided me with the basis for formulating my own categorisations in the content analysis model I developed. It allowed me determine the nature of the cognitive

complexity provided for the child, but further, it allowed for a determination of whether the activities provided had the potential, or not, to facilitate the type of learning that would be expected for each level. From this emanated my two categorisations of "high potential" and "potential realised". I was able to determine whether the material, as presented in the textbook, could enable the content objectives of the curriculum to be realised. This allowed for an appraisal therein of the neglect and marginalisation of temporality (orienting principle 2, Figure 11 above).

In the review that follows, textual materials have been selected that cater for classes at key progression points in their primary schooling, mirroring the levels selected also for the school-based qualitative interviews: junior infants, third class and sixth class. The rationale for this selection is to provide insights into the opportunities for temporal cognition afforded to children on entry, aged 4, as well as at the beginning and end of their senior cycle at primary school. Thus, all the history textbooks and/or workbooks (n=14) that are currently available (2010-2012) for Irish schools at these three class levels were reviewed, as listed in Table 2 below.

Table 2: Range of history textbooks and workbooks produced by Irish publishers (2010-2012).

Class Level	Publisher	Publisher	Publisher	Publisher	Publisher
	C.J. Fallon	C.J. Fallon	The Educational Company	Folens	Folens
Junior Infants	*All Around Me*	*What A Wonderful World*	*Window on the World*		*Earthlink*
Third Class	*History Quest 3*	*What a Wonderful World 3*	*Window on the World*	*It's About Time 3rd Class*	*Earthlink 3*
Sixth Class	*History Quest 6*	*What A Wonderful World 6*	*Window on the World*	*It's About Time 6th Class*	*Earthlink 6*

Some of the texts adopt an integrated approach to the teaching of SESE and SPHE, a model especially evident at junior level. Where this occurs, the history-related activities are extrapolated for review. Other providers choose a segmented approach, providing separate books and/or workbooks for each of the component parts of the SESE and SPHE curricula. In each case, the materials are examined to determine the nature and extent of the opportunities provided for children to develop and consolidate temporal ways of knowing.

3.2.3: Methodology for undertaking the data collection

Influenced by the theories outlined in the previous section, the content analysis focused on

1.   the specific nature of each of the educational activities, as outlined in the text;

2.   the level of cognitive complexity of the activity;

3.   four levels of potential in contributing to the development of children's temporal cognition and chronology (none, very limited, limited, high);

4.   whether high potential was realised or unrealised.

Thus, 6 categories of potential were delineated and coded numerically (1- 6), to quantify the provision and potential for temporality in each educational activity, as represented in Figure 15 hereunder. Each educational activity is individually itemised, both for its contribution to temporality and chronology, thus presenting a large quantity of data points (n=413) from the 14 textbooks examined. This data, as well as claims emanating from it, are presented in chapter 4.

Figure 15: Content analysis of the potential for temporality in the textbook activity
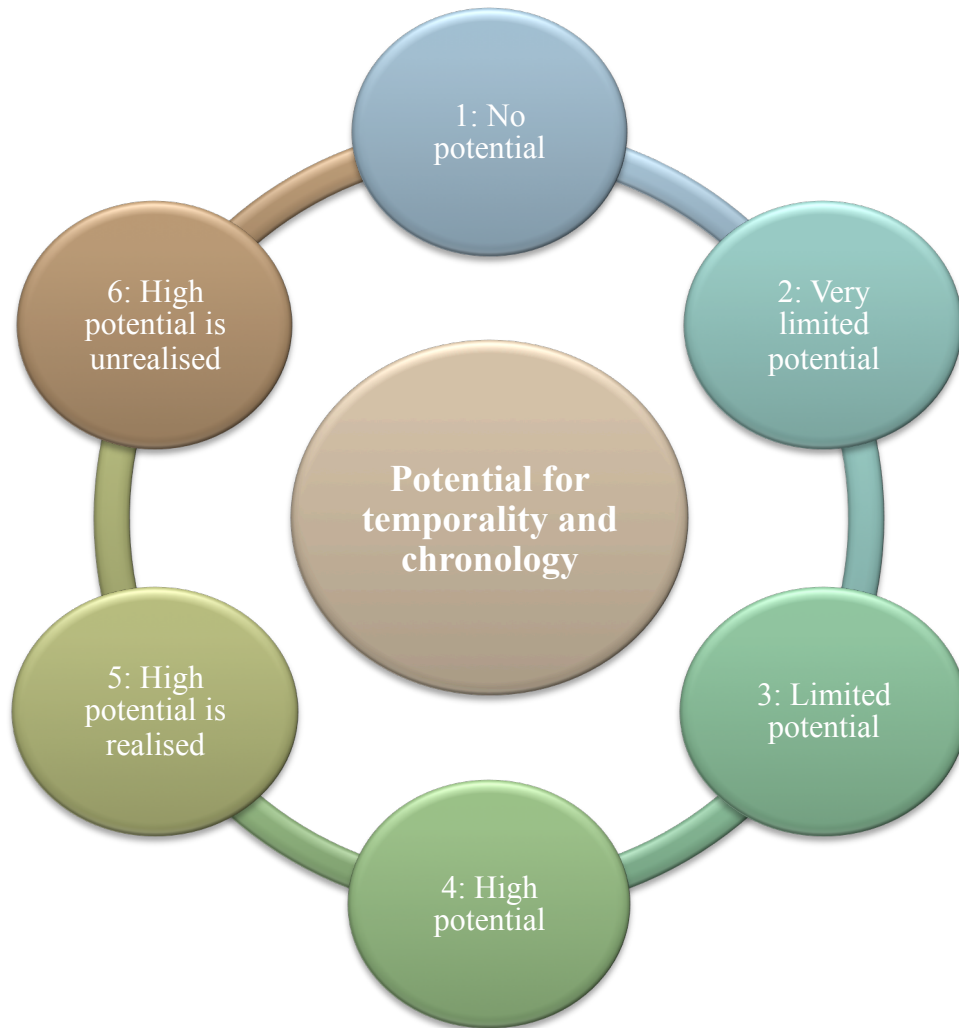
However, cognisant of 'Reader Response' theories (Rosenblatt, 1988) and reflecting the third principle permeating this work (figure 11), it is important to note the individual, transactive nature of the relationship between the history text and the child's social, psychological and cultural world. Rosenblatt's transactional theory establishes that the text must be seen as an affordance, and contingent upon the beliefs, attitudes, experiences, associations and feelings of the child. Relating this theory to temporal and historical understanding, it is important to note that a singular, absolute level of response cannot be anticipated in making sense of the history text, because of the variable life experiences of children.

3.3: Strand 2 - survey relating to student teachers

3.3.1: Rationale for the survey

Strand 2 of my research involved undertaking a survey with student teachers as a target population to develop insights into the manner in which they are socialised into the prevailing culture for teaching history. Congruent with the theories of Berends (2006, p. 624), a survey method was deemed suitable in gleaning both quantitative and qualitative information and understanding of the social context in which student teachers learn, as well as the social processes within schools which affect teaching for historical understanding (orienting principle 3, figure 11). In particular, I sought to examine how, as apprentice teachers, they navigate this social construction that exists between themselves and experienced teachers in developing children's temporal cognition. Many have undertaken placements in classrooms where there is an established practice of using history textbooks and workbooks, and my study aimed to qualitatively determine the nature and extent of their experiences of using these resources while they are on school placement.

I adopt the term "qualitative" in a broader sense here, understanding qualitative research in Denzin and Lincoln's (1994) terms as

> "multi-method in focus, involving an interpretive, naturalistic approach to its subject matter … [where] researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them" (p. 2).

Mindful of what Williams (1996) called "a kind of 'coming-clean' genre" (p. 41) in current research literature, I now reflect on the validity of seeking this type of information in what Malone (2003) terms my "academic backyard" (p. 800), or the home setting of the institution where I work. I conducted the research here because of what Converse et al. (2008) term the "convenient access" (p. 99) I had to this cohort of respondents; as one of their college tutors,

I was in a position to have the survey administered directly to students, thereby increasing the likelihood of a higher response rate. Thus, the design of the study emanates from my praxis as a teacher educator (orienting principle 4, figure 11). Undoubtedly, it is embedded in my personal work time and space.

Advance notice of one week was given prior to the dissemination, and all respondents were assured of the voluntary nature of their participation. Cognisant of Rossman's (1984) claim that "*all* research may be coercive, especially when done 'at home'" (p. 225), and Malone's caveat regarding the complications and ethical issues that can be encountered when conducting research in such a setting, I endeavoured to avoid any perception of coercion, by providing a clear opt-out statement for any student who did not want to participate. I wanted to prevent participants feeling "trapped and captured" (Brunner, 1999, p. 138) by the research process, thus, I had the questionnaires distributed and collected by a willing colleague in cluster groups of 25-30 students. While I introduced the survey in person prior to dissemination, and provided a written "letter of transmittal" (Mertens, 2010, p. 199) in the questionnaire, I withdrew immediately from the vicinity, leaving students to stay or go, as they wished.

The students' position in this situation deserves consideration here: despite having a choice, both Malone's and Moje's (2000) assertions have much validity, regarding the unequal distribution of power between the participants and researcher in such situations. In hindsight, my approach reflected what Newkirk (1996) termed "studying down" (p. 4), studying respondents who have less power or authority in the situation, and his caution holds traction that we have "a special obligation to recognise the vulnerability of those we study". This raises a consideration for me that there may have been an element in the students' responses

of them reflecting what they thought I would have wanted them to say, or what they had been introduced to by way of recommended practice in the curriculum, rather than what they actually encountered or did while on school placement.

In keeping with Mertens' (2010, p. 174) direction, three specific study objectives were established:

1. to glean pertinent, reliable information from this rich data source;

2. to report student teachers' experiences objectively, post-placement, without any fear of judgement of teachers' individual practices;

3. to examine the wider resources that are used in schools in facilitating children's understanding of temporality.

Mindful of Chromy et al.'s (2004) advice, data from existing related surveys was sought, but none could be located. Thus, a new questionnaire was devised, using a simple descriptive approach (Mertens, 2010, p. 177), to determine the characteristics of this student cohort's experience at this point in their programme of study. The purpose of the questionnaire was to glean quantitative data relating to use of the textbooks and workbooks in a wide variety of settings. Further, respondents were asked to provide contextual information of a qualitative nature pertaining to their experiences of being taught history in primary school, as well as their level of comfort in teaching the subject now. A combination of open and closed-ended questions was utilised and brief, clear instructions were provided. Cognisant of the recommendations of Converse and Presser (1986), survey questions were crafted to be clearly and unambiguously interpreted by respondents, and a format was adopted that could be easily managed and answered in the time available. The questionnaire was pilot tested with a sample (n=10) that was similar to the population.

3.3.2: Methodology for undertaking the data collection

The sample unit comprised undergraduate (UG, n = 100) and post-graduate (PG, n = 50) students who had undertaken placements across a variety of age-groups and primary schools, located over a wide geographical area. Reflecting Mertens' guidance (2010, p. 317), the strategy chosen for selecting the samples was influenced by logistical factors; 4 cluster groups of the UG respondents were randomly selected from a possible 16, in the understanding that they were representative of the available population, while both existing clusters were utilised at the PG level.

Thus, the questionnaire was distributed to a sample unit (n=150) of student teachers. Reflecting Kolar and Kolar's recommendation (2008), details were provided of how the gathered data would be used. Mertens (2010, p. 181) cautions that "good timing is very important": because of the post school-placement timing, respondents knew that their participation was not linked in any way to any assessment of any element of their programme of study.

Their placements were undertaken in a diverse range of settings: large and small urban schools, rural schools, schools designated as having "disadvantaged" status (DEIS), single sex and mixed schools, single grade and multi-grade classes. Prior approval for the study was acquired from the Social Ethics Committee of UCC (SREC - Appendix 1) and the Ethics Committee of Mary Immaculate College, Limerick (MIREC - Appendix 3), the institution hosting the study. The data generated from the survey was analysed using the IBM SPSS Statistics 19 software package.

3.4: Strand 3 - School-based qualitative interview to examine children's temporal cognition

In section 2.4 of my literature review, the active engagement by children in forming and determining their social lives has been established. The intricate process is elucidated by which they participate in, and construct, their worlds. This is reminiscent of the first orienting principle that I identified above (figure 11) regarding whether the empowerment of children is reflected at a policy level.

My study aims to include the voices of children in the data presented for consideration, utilising reputable data collection techniques, and it views their perspectives as invaluable in providing insights into their temporal cognition. It seeks to capture the perspectives of children through qualitative interviews, using the medium of story to generate children's discussion and responses to the temporal considerations of the topic being explored. In doing so, it reflects the third orienting principle established in figure 11 above and it contributes significantly to the existing scholarly knowledge base. No specific Irish study can be located which elucidates the temporal understanding of children, as voiced directly by children themselves. As the literature review of this study attests, to date, the bulk of learning emanating from research related to children's temporal cognition has been based on the perspectives of researchers and not from children.

3.4.1: Ethical considerations when conducting qualitative interviews with children

Literature relating to the theoretical basis for conducting qualitative research with children is growing. The work of Docherty and Sandelowski (1999) is particularly insightful in determining how best to prepare for children's participation in qualitative interviews, mindful

of their developmental requirements. They writers claim that the focus of research has moved quite considerably from seeking information <u>about</u> children to seeking information directly <u>from</u> them (orienting principle 3, figure 11). While their work examines illness-related experiences of children, they note that such experiences were, in the past, usually described by third parties such as parents or carers, in the understanding that children did not possess the verbal or social skills to accurately relate the true nature of the experiences themselves at first hand.

In an effort to address what they see as this misconception, they propose a model for researchers that takes cognisance of four key elements which, when combined, lead to the "faithful rendering of childhood experiences" (p. 183): the developmental age of the child; the need to clarify for the child the purpose of the interview; the interview structure and the nature of the data collected. Nespor (1998) concurs, stating the necessity of explicitly clarifying for the child the role they are expected to play during the interview. This has resonance with the distinction drawn by Kvale and Brinkmann (2009) between the "miner" and "traveler" metaphors of undertaking interviews. Their theory asserts that the miner-interviewer "digs nuggets of knowledge out of a subject's pure experiences, unpolluted by any leading questions", whereas the interviewer-traveller "walks along with the local inhabitants, asking questions and encouraging them to tell their own stories of their lived worlds" (p. 48). The two metaphors provide contrasting perspectives on the interview approach to be adopted. A miner approach regards an interview as an opportunity for data collection which will be followed by analysis in the absence of the data provider. A traveller approach involves a co-construction of data and understanding, and emphasises the story to be told to an audience.

Writers such as Bearison (1991) claim that children are best positioned to provide information about themselves. This view is mirrored in the work of Yamamoto et al. (1987) who claim that the challenge lies in understanding what it means to be a child and seeing their worlds, not from the adult perspective, but from their own.

However, Irwin and Johnson (2005) claim that despite the effort to recognise the importance of children's voices in recent research, the challenges inherent in data collection with children may not be fully appreciated or readily documented. They refer to the "pearls, pith and provocation" experienced when interviewing young children (p. 821) and identify a range of complex challenges faced during data collection. They claim that the

> sanitized descriptions of data collection mask the unique situations, dilemmas, and practical sticking points involved in collecting data from children (p. 822).

They build on the work of Docherty and Sandelowski in creating a high quality model for researchers and identify 6 prerequisite considerations when undertaking qualitative research with children. Their approach is summarised in Figure 16 below.

Thus, their model takes cognisance of the phenomenon of stranger danger and the responsibility of the researcher to build a positive rapport with the children and their parents, mindful that in our everyday social encounters, children are taught to be wary of people unknown to them (p. 824). Further, the interview must be structured to accommodate the linguistic competence of the children being interviewed. Thus, a mix of open-ended and closed questions may best facilitate initial spontaneous conversation. Irwin and Johnson stress the need to allow children respond in an unfettered manner, and this should be clearly

visible in transcripts of children's utterances, where the voice of the respondent should outweigh the input from the research interviewer (p. 825).

Figure 16: Prerequisite considerations when undertaking qualitative research with children (source: Irwin and Johnson, 2005).
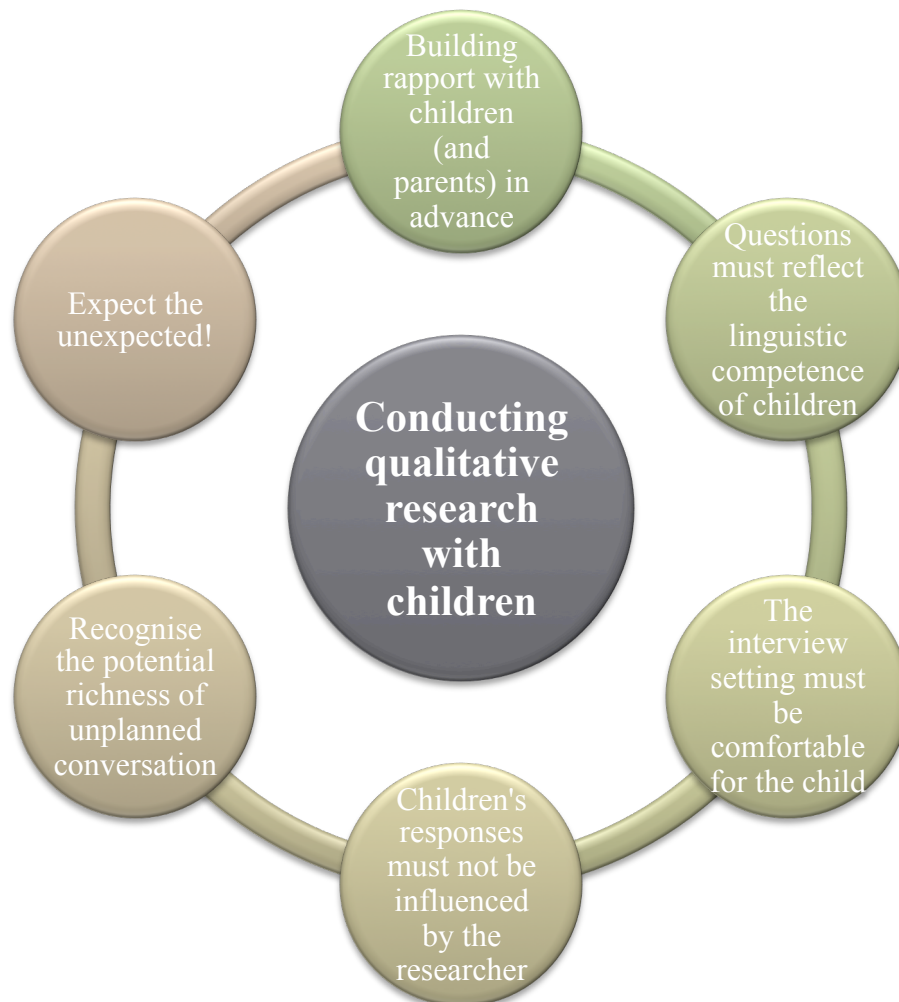
The importance of the interview setting is highlighted by the writers, where the needs of the children concerned are taken into consideration: does the child needs space to move about, or is he best seated in one position? Does the child feel comfortable in a familiar setting, or is she distracted by sounds or movements of others? Does the presence or absence of a parent/carer influence children's responses? While the interviewer must not lead or influence the children's responses, the potential richness of the generated data must be acknowledged,

even if children stray from the pre-ordained questions. The use of pseudonyms in transcripts of children's interviews is advocated, with children choosing the names they want used. Finally, the writers muse that the process of interviewing children is rarely uneventful and unexpected occurrences need to be accommodated.

3.4.2: Enhancing children's temporal concepts through narrative

Consideration of the central, mediating role of texts and the narrative format as a resource in introducing children to the story of the past is pertinent here, given a review of Irish history texts that is undertaken in chapter 3 of this work. Hoodless (2002) points to the extensive literature that exists on connections between history and narrative fiction, and she claims that narrative is identified by many writers as a worthwhile pedagogical approach in developing young children's emerging awareness of time. Such writing is examined here for the perspective it offers to this study on the merits of utilising narrative text in exploring children's temporal ways of knowing during the qualitative interviews.

In the revised Irish primary school curriculum (1999), a rationale is presented for using story as a particularly useful tool in facilitating the development of children's concepts of time and chronology. Banks and Banks (1999) emphasise the potential of introducing literature from different genres which would contribute to children's ability to make connections with the past, by allowing them to relate to events and occurrences in the story, thereby supporting their emerging time-related understandings. Cox and Hughes (1998) examine the complementary relationship that exists between fiction and history and Hoodless (1998) concurs, pointing to the advantage of utilising carefully selected historical fiction in cultivating chronological awareness. Later, Hoodless (2011, p. 24) argues that the close links between the skills involved in understanding narrative time in story and chronological time

can be attributed to their common vocabulary, thus allowing children a familiarity and comfort with the medium. Levstik (1986) points to the importance of students experiencing a wider variety of resources other than mere textbooks in accessing historical information. She points to the value of integrating language arts with historical studies as a means of creating opportunities for the interpretation and creation of narratives. Levstik and Pappas (1992) make a cogent argument for utilising narrative text when selecting instructional methods in teaching history to younger children. They point out that such texts are appealing to children, but are also basic to the culture of history as a discipline. Brophy and VanSledright (1997) concur, seeing the narrative format as giving shape to historical events, with some being more significance than others, while embedding them within a causal interpretation:

> Historians transform a collection of facts into a sequence of events – a story – that includes interpretation of the causes that account for these events (p. 17).

However, the writers caution that the teacher needs to be cognisant of the different purposes for which texts are written. Richgels, Tomlinson and Tunnel (1993) conducted an interesting enquiry into the differences and similarities in text between what they term "trade books" (fiction/literature) and expository textbooks. They concluded that trade books were more explanatory and had a more comprehensive level of detail than the textbooks they studied. This view is reflected in the related theories of McKinney and Jones (1993) who concluded that a combined use of trade books and textbooks led to additional historical information being presented over textbooks alone. Levstik (1986) cautioned about the need for teachers to draw a clear distinction between historical accounts and fictional recreations that may, or may not, be historically accurate.

The work of Bage (2006) provides very specific guidance on the potential use and application of story as a methodology in history teaching. He provides a rationale, as follows (pp. 49-53), for using narrative to underpin our educational practice in history teaching.

1. Most children use and enjoy story;
2. Stories put meaning centre-stage;
3. Stories inspire curiosity;
4. Literacy benefits from stories of fact and fiction;
5. People use stories *to think with*;
6. Stories hold up mirrors;
7. Stories can ignore labels;
8. Stories communicate information;
9. Stories absorb and stretch agile minds;
10. Stories suffuse curricula;
11. Stories can simplify;
12. Stories are flexible;
13. Stories can change people;
14. Stories explain and moralize;
15. Stories initiate people;
16. Stories explore people;
17. Stories analyse consciousness;
18. Stories individualise experience;
19. Stories are educationally ancient;
20. Teachers already use stories.

In addition, he identified a list of genres and styles of narrative commonly used in history teaching.

Figure 17: Catalogue of narrative styles and genres commonly used in history teaching (Source: Bage, 2006).

Biography	Legends	Imaginative and fictional writing	Narrative visual art forms	Poetry
Autobiography	Myth	Oral storytelling and listening	Museum displays	Procedural descriptions
Life history	Folklore and folk tales	Educational and performance drama	Monologues	Old sayings
Life story	Observation	Personal accounts of past events	Memories	Songs
Oral history	Journal and diary	Film – imaginative and persuasive forms	Media reports and representations	Television - dramas, news
Interview	Personal anecdotes	Games and simulations	Letters	Written fiction – stories and novels;

3.4.3: Methodological approach of the qualitative interviews

This represented strand 3 of the data collection, involving school-based qualitative interviews. Its purpose was to examine children's narratives about time from two perspectives, the cognitive-developmental and the sociocultural influences, on their emerging sense of temporality. Mirroring and augmenting the findings of seminal research in this area, as conducted by Hoodless (2002) in the UK, the study set out to evaluate the degree of uniformity that exists, if any, in children's ability to conceptualise time. The emphasis throughout was on individual, subjective responses and experiences of children. The interviews were conducted on a paired level, providing opportunities for me to engage with respondents, using non-complex tasks, as advocated by Friedman (1982), in the expectation

that a better picture of children's cognition of such concepts will be revealed that might be anticipated if earlier statistical methods were to be utilised (section 2.2, literature review).

The aim of the research was to generate data from the responses of a cross-section of primary pupils, in an urban and a rural school, including children of mixed gender, different cultures and without reference to their academic abilities. Interviews were conducted with 12 children in two schools: 2 at junior infant class level, 2 at third class level and 2 at sixth class level. The children were selected by their teachers on the basis of their suitability to engage with the researcher and the stories.

One school (School A) is situated in an urban, densely populated area of a city, with DEIS status (designated as serving an economically disadvantaged community) and single stream classes of mixed gender. The children were ethnically diverse, with some speaking English as an additional language. The other school (School B) is situated in a rural setting in the county, with multi-grade classes of mixed gender. In this cohort, the majority of pupils are from middle class families, there is very limited representation from ethnic communities and all of the children spoke Irish or English as a first language.

Neither of the sites chosen for the case studies was personally special or significant, though access to the sites was facilitated by my previous involvement in the schools as a teacher-educator and supervisor of student teachers while on placement. Thus, in each school, two junior infant, two third class and two sixth class pupils took part in the study. The rationale for selecting pairs of children at each level was that it would provide a positive interaction and dynamic between the children, and potentially more enriching data.

Building on Friedman's (1986) and Tartas' (2001) categorisations, as outlined in the literature review of this study (section 2.5), a unique framework for presenting and analysing the data was devised to specifically examine children's responses for evidence of a broad range of aspects of time-related cognition. 9 individual components of temporal cognition were identified for consideration, sub-dividing and building on the 7 broad categories identified earlier in Figure 7 above (section 2.6). The 9 categories reflect the prominence of different components at different developmental stages and they are illustrated in Figure 18 below.

In the second instance, a key dimension of the data focussed on aspects of the children's conversations which demonstrated the degree to which they were embedded in sociocultural interactions (orienting principle 3, figure 11). Kvale and Brinkmann (2009) caution that current interview research is likely to overemphasise the individual and neglect the social and cultural influences on their constructions of the world (p. 294). Accordingly, the data was categorised according to a number of significant sociocultural influences on the children's interpretation of time that were identified in the study. 6 themes emerged, as represented in Figure 19 below.

Figure 18: Framework for the examination of children's temporal responses – cognitive-developmental perspective
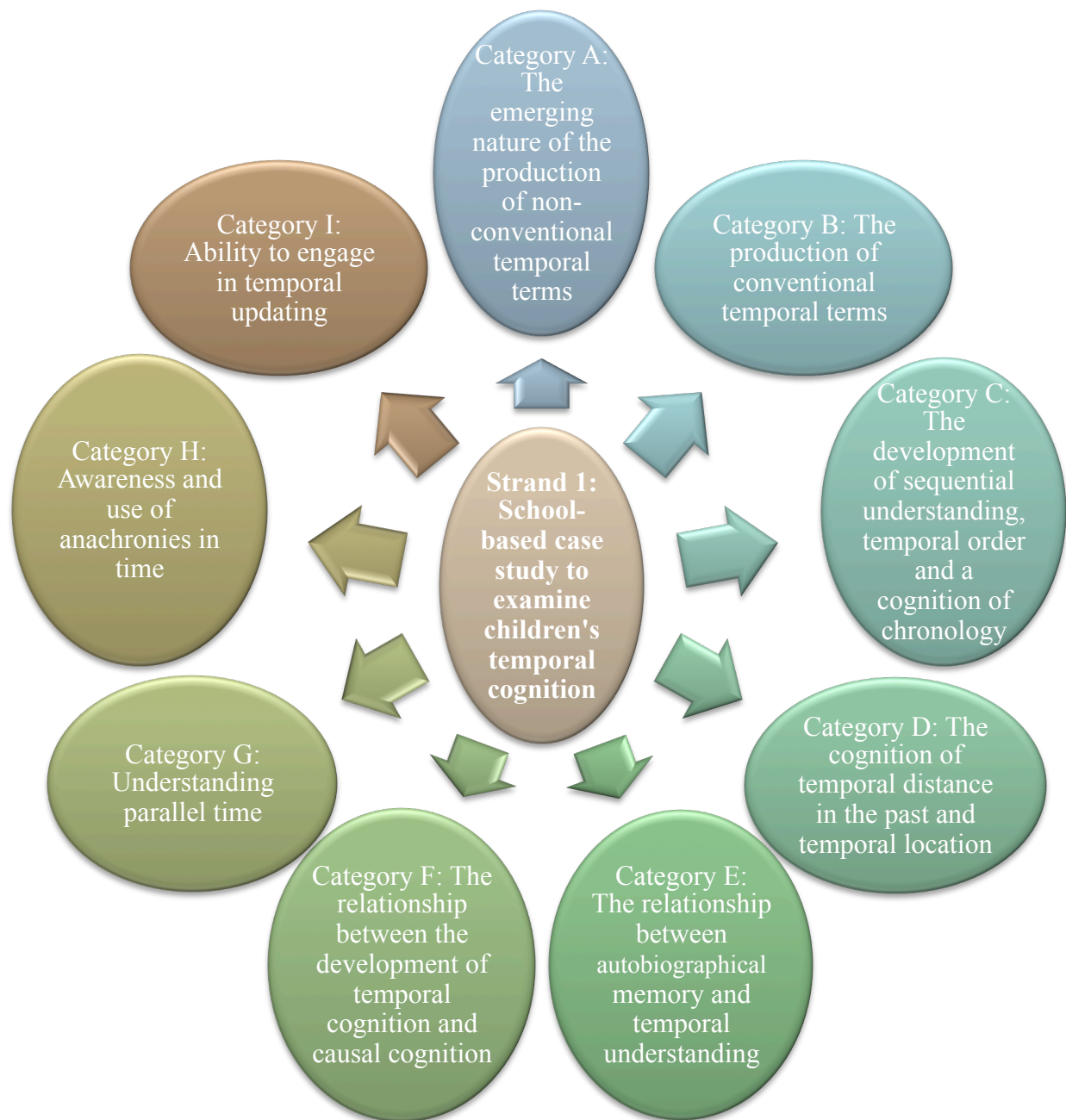
Figure 19: Significant sociocultural influences on children's interpretation of time
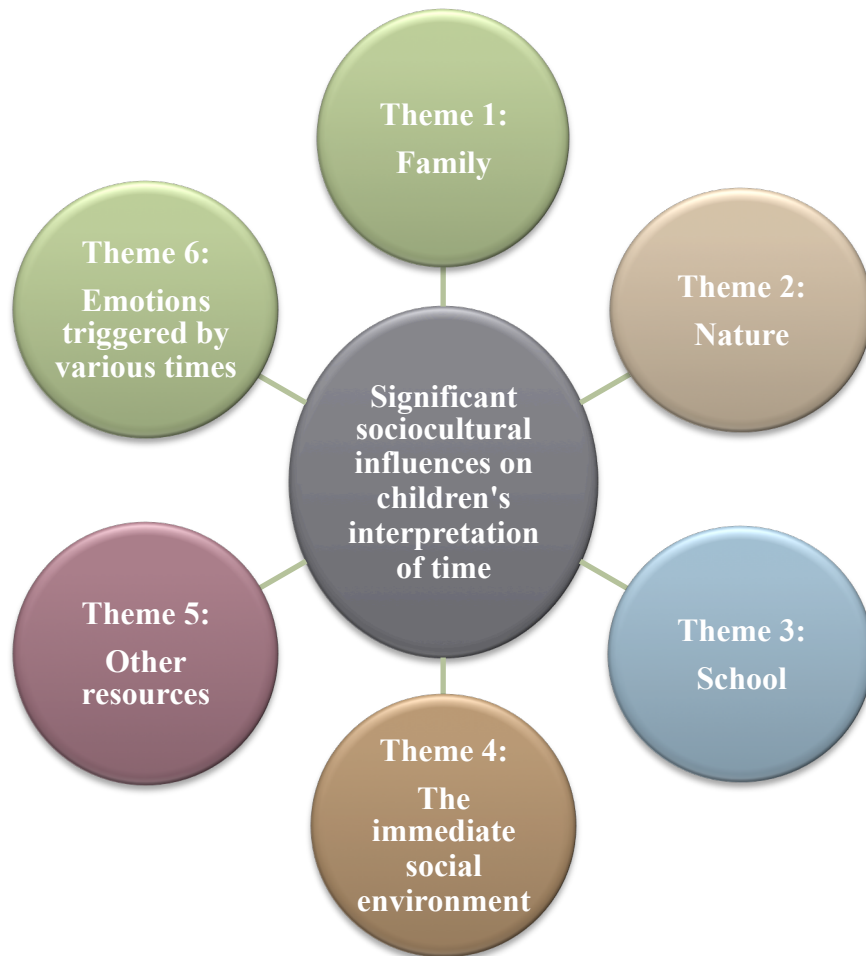
3.4.4: The data collection process

The study generated a significant quantity of data, based primarily on children's conversations with me about time, emanating from the pre-selected stories. In addition, the children were asked to recount their personal experiences of how they spend their time on an average school day or at weekends. This reflected orienting principle 1 above (figure 11) and sympathetically mirrored the approach advocated by Docherty and Sandelowsky (1999) and Irwin and Johnson (2005, section 3.4.1), where information is not sought about children, but sought directly from them.

It is worth reflecting on my position as researcher in this context (orienting principle 4, figure 11); as interviewer, my position in the process is influential and the unequal power relations identified by both Malone (2003) and Moje's (2000) must be acknowledged (section 3.3.1 above). The interview itself can also be seen as a time practice, conducted with children in an orderly manner, using sequential story to engage them in conversation. It is told by one person, the adult. Despite careful planning to ensure that questions were open-ended and framed in a manner that would not lead the children, it is clear from the transcripts that there were occasions in each of the interviews when I influenced what was said, albeit inadvertently. I also influenced the time children had to explain what they meant, or to reflect on and verbalise the personal connections they made with the story. The children intervened in the story sequences from time-to-time and offered their own stories. It is very evident from the data that I tried to maintain the sequential nature of the story, by returning to it after such interventions, thereby influencing their cultural interactions and apprenticing them into a linear notion of time.

While it was envisaged that this work would be undertaken in a classroom setting with the class teacher present, as planned, it was not feasible to do so, as the classroom spaces available were restricted, and each of the 6 teachers involved expressed a preference to use an alternative quiet space adjacent to, though not directly connected with, the classrooms. All 6 teachers greeted me hospitably outside the classrooms before and after the interviews, yet they appeared to be less than comfortable about any aspect of the work taking place within. This may be attributed to a reluctance to be observed while they teach, or may be associated with a wish not to highlight the involvement of the participating children in front of the others. Again, I was mindful of my own position within this study (reflective of principle 4 above): formerly, my relationship with all 6 teachers was that of teacher-educator/teaching

practice supervisor and evaluator of their performance during teaching practice; now my role had changed to colleague/researcher, though the teachers may not have readily acknowledged the transition. Despite the change in the proposed venue, child protection guidelines of the schools were observed at all times and the interviews were conducted in accordance with the written terms approved in advance by the children, their parents, teachers and school principals, as set out in Appendix 1. The ethical considerations established by Irwin and Johnson (2005) when undertaking qualitative research with children (Figure 16 above) provided a firm basis on which to proceed. I was assured by both principals in the schools that the concern I displayed over the child protection issue was unfounded – "no need to worry, we have it well covered" (Principal, school B). In school A, the school provided and independent observer, but in school B, this facility was not available. In each class, the children were selected by the school on the basis that they would be likely to freely engage with me. Otherwise, I had no background knowledge of the children before the interview.

Mindful of Merten's (2010) comment that "everything is data", I ensured that written notes were kept of all prior arrangements and each session was audio-recorded and subsequently transcribed. The work was completed with two children at a time and a warm, convivial atmosphere was fostered. The children were introduced to the activity and were given time to come to terms with the setting, chatting informally about their preparations for school celebrations at Christmas. The interview rooms in both schools were small and the children told me that were occupied normally by additional support teachers. The children had time to become aware of pictures and furniture in the rooms, though there was little noise or other distractions.

Kvale and Brinkmann (2009) assertion that "the interview entails an asymmetrical power relation" (p. 33) prompted me to be aware of the transactional nature of the interview. Thus, I tried to balance the interaction, so that it was not merely a one-way dialogue, with the interviewer questioning and the children answering. Likewise, I aimed to avoid being associated by the children with the classroom teacher, as cautioned by Eder and Fingerson (2002) and I attempted to refrain from "conveying to the children an expectation that there was a right and a wrong answer" (p. 181) in our discussions.

Following introductions to the interviewer and the work, the selected stories were read to the children and discussions ensued, prompted by a series of pre-ordained, open-ended questions designed to help elicit responses that focus on the time-related dimensions of the story. From time to time, the children interjected and offered observations, or made connections between the content of the story and their own experiences, reflecting what Irwin and Johnson (2005) describe as the "richness of unplanned conversation" (p. 821). Occasionally, the script was amended or explanations were provided to assist children's understanding. In addition, the children were asked to describe specific daily events and routines in their lives. All the sample questions are presented in Appendix 1.

Stories were carefully chosen to reflect what Hoodless (2002) describes as temporally rich and which belong to a genre that "play with time", where there are a number of interweaving story lines that meet and diverge throughout. This provided rich opportunities for potential discussions about such facets as time that is "real", "make-believe"/"made-up", "past", "present", "future", "dream", "experienced", "imagined". Interestingly, each story provided opportunities for exploring the range of concepts outlined in section 2.5 above, from the basic

production of temporal terms to the complex concepts of parallel time and anachronies. The stories were used as a medium to generate discussions about the events that happened.

The selected stories are illustrated in Table 3 below:

Table 3: Stories selected for school-based research with children.

Class level of children interviewed	Story selected	Publication details
Junior Infants	*Tell Me the Day Backwards*	Lamb, A. (2012), London: Walker Books.
Third Class	*The Night Horse*	Arrigan, M. (2001), The Magic Emerald English Language 2 Programme. Dublin: Folens (pp. 131-144).
Sixth Class	*The Time Seeker*	Murphy, M. (2001), The Magic Emerald English Language 4 Programme, Dublin: Folens pp.113-128.

It was not considered feasible to use a wider range of documentary evidence (other than their descriptions of their daily activities) as a source of data in assessing children's conceptual understanding. While data may be gleaned from children's written work in history, it was considered unlikely that it would provide data focussing on the very specific language and intricate understandings being examined with individual children, as outlined in figures 18 and 19 above, especially at the junior infant level. Thus, sources such as children's projects, completed worksheets, workbooks, etc., were not examined, as they were likely to present too many variables. Likewise, data could not be derived from standardised history tests as they are not available for implementation in primary schools.

3.5: Conclusion

The three research strands of this study yielded a vast array of unique data which is presented in the following three chapters. The data provides a basis for addressing the key research questions established at the outset of this study, and has a potential contribution to make in augmenting, and integrating with, the insights of existing related literature. Specifically, it generated a wealth of evidence relating to the mediating role of textbooks in providing opportunities for developing temporal ways of knowing. Further, it examined the nature and frequency of use of such texts in the promotion of historical understanding, and it highlighted the varied experiences of student teachers as they are apprenticed into the prevailing culture for teaching history. Finally, the qualitative interviews provided an abundance of data, elicited directly from children, with the intention of utilising their voices in the information presented for consideration. In the following chapters, the data will be presented and claims emanating from it will be set out, potentially contributing to the understanding of children's temporal ways of knowing.

Chapter 4:

Arbiters of the curriculum? History textbooks and opportunities for temporal ways of knowing

4.0: Introduction

The data accruing from the content analysis of selected history textbooks and workbooks is now presented, and claims emanating from it are delineated. Reverting to the power and politics principle (figure 11), it is eminently clear that the textbook authors establish themselves as arbiters of the curriculum, with introductory statements abounding of assurances of compliance with the established policy. Goodson's theories (section 2.2.9) relating to the politics and power of the curriculum are recalled here, regarding the pervasive adult construction of knowledge that is provided in the textbooks, and the underutilisation of opportunities to acknowledge and reflect the life world of the child in the learning provided. This is noteworthy, given Wagenaar et al's. (2010) research, which indicated that 80% of the Dutch teachers surveyed in grades 6, 7 and 8, follow textbooks almost completely. Likewise, Waldron's (2013) assertion is recalled, that the approach of history textbooks is driven by the demands of the market, as well as teachers' concerns to cater for an overcrowded curriculum. She itemises a number of trends in history textbooks: "the recycling of text from textbook to textbook, the stripping away of historical concepts, the neglect of processes and the blandness of the writing" (p. 56).

Clearly, such approaches conflict with the constructivist theories of Gopnik et al. (2001), as outlined in section 1.1 above. Notably, despite assurances to the contrary from the authors, the neglect and marginalisation of temporality is omnipresent.

Reflecting orienting principle 4 (figure 11), the specific interpretation of the data that follows is influenced by my experience of studying primary history as a teacher educator over a long period, as well as my experience of developing curriculum projects and writing activity-based

educational programmes in both SPHE and History at all four primary school levels. In particular, I draw on this to determine the level of cognitive challenge provided for temporality in the learning opportunities provided.

4.1: Strand 1 - Content analysis of history textbooks

Given the large quantity of data points (n=413) that have been generated from the review of the 14 extant history textbooks, I am now selecting one sample table of data at each of the three class levels for presentation here, as an illustration of their provision for temporality. All the remaining data is presented in Appendix 2.

Reminiscent of Porter et al.'s theories regarding discordances between the intended, enacted and assessed curricula in history, as presented in Figure 8 above (section 2.5.6), the data reveals that overall, the texts at the three levels combined, were deemed to have a strong predominance (75%) of activities which had poor provision for temporality. Thus, 1% had no potential, 9% had very limited potential, while 65% had limited potential, as indicated in Table 4 below.

Table 4: Provision for temporality in textbooks (n=402)

Junior Infants, Third Class and Sixth Classes combined

- None (1%)
- Very limited (9%)
- Limited (65%)
- High potential realised (21%)
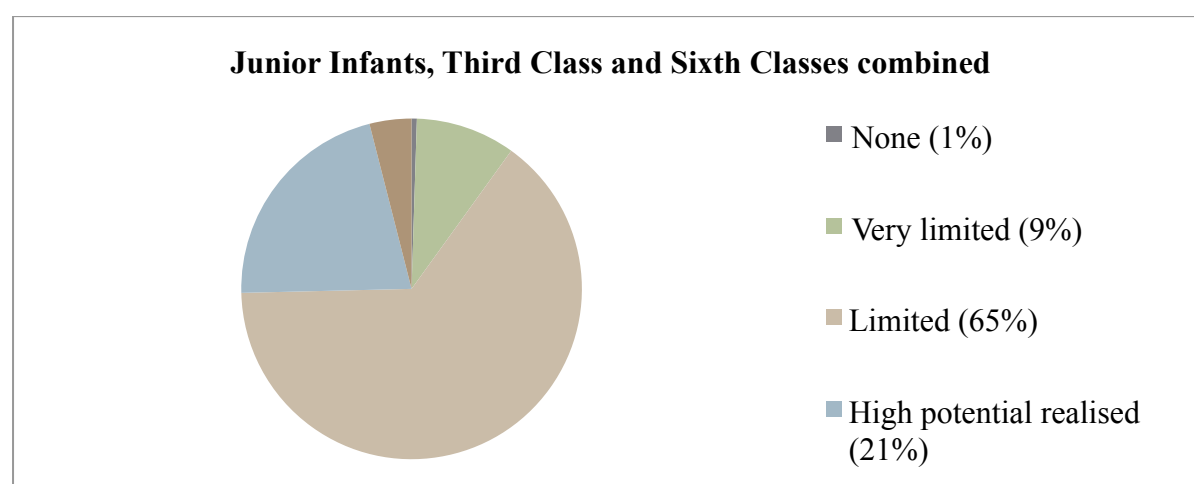
However, a number of exceptions have been identified, with some texts adopting an in-depth approach to temporality. In particular, the series *What a Wonderful World* addresses temporality in a comprehensive manner, maximising opportunities for its development in the majority of activities provided, especially at the junior infant and third class levels, though it is not as well defined at the sixth class level.

As the data attests, throughout, it is clear that many of the theories that emanated from the 'New History' approach, as examined in section 2.2.2 above, are still reflected in the approaches of the texts examined. So, for example, the "local and familiar", as encouraged by Marshall (1963) is utilised. So too, many of the second-order history concepts are given importance by the textbook authors in the activities they set (as delineated in section 2.2.5 above), echoing what Den Heyer (2011,) describes as the "procedures" of historical thinking. Thus, reflecting the theories of VanSledright (1995) regarding the development of historical schemas (section 2.2.3 above), and Foster and Padgett's (1999) argument for learning models to transcend the transmission model (section 2.2.3 above), some of the texts abound with opportunities for children to examine evidence, make determinations about cause and effect, look for indications of change and continuity and develop a sense of empathy with the stories of the past, as depicted.

Significant divergences in the approaches of authors to temporality are evident within each level, and there is little consistency from one level to another between the five series examined. This finding is reminiscent of Motherways's assertions (1986, section 2.5.1) relating to the poor alignment between expository texts and the fulfilment of curriculum objectives (albeit regarding the 1971 Irish history curriculum). Such divergence is likely to pose challenges for teachers who are charged with the responsibility for their selection and

use, as it requires a degree of skill and competence in applying criteria which aid this decision. Implications of such inconsistencies for the pre-service and in-career development of teachers will be examined in chapter 7 of this work.

4.1.1 Junior Infant level

An examination took place of the 4 history texts available at junior infant class level. The data reveals that generally, the textbooks cater poorly for the development of temporal cognition, with 59% of activities deemed to have no potential, very limited or limited potential for learning in this regard. There is a clear discordance between this finding and the conclusions of both the literature review of this study and the school-based qualitative interviews, which clearly establish that children are capable of developing temporal cognition at junior infant level.

Collectively, 29% of the texts were deemed to have high potential for such learning, while another 12% had high potential which was not maximised in full, as presented. The text *What a Wonderful World* reflected a strong provision for temporality, with nearly half of its activities having a significant contribution to make. Interestingly, 98% of the texts made some contribution, though over one third (37%) had limited potential, as presented.

This data is presented in Table 5 below:

Table 5: Textbook provision for temporality at Junior Infant level (n=84)

Provision for temporality - Junior Infant textbooks

- No potential (2%)
- Very limited potential (20%)
- Limited potential (37%)
- High potential (29%)
- High potential, but unrealised (12%)
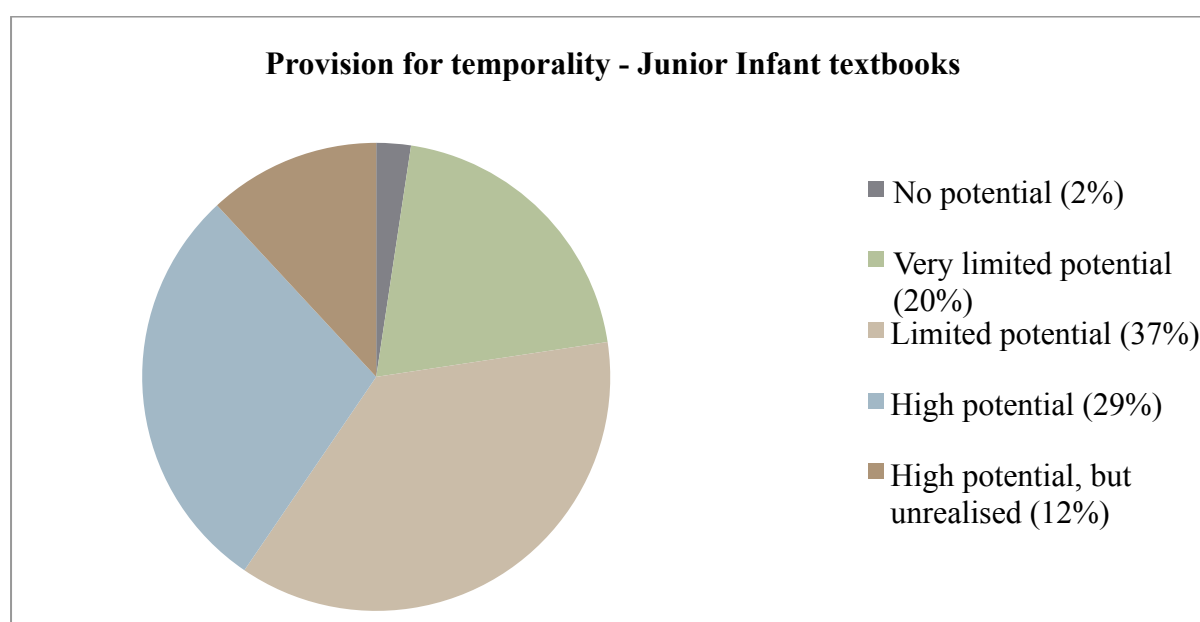
I am presenting one text as an example of how the review was undertaken and the three remaining texts are analysed in Appendix 2 (Table 6: *Earthlink*; Table 7: *All Around Me;* Table 8: *What a Wonderful World*).

4.1.1.1: *Window on the World* **Junior Infant Activity Book (2010), Educational Company**

Authors: Arthur, F., Courtney Murphy, B. and McCarthy Cronin, E.

11 specific history activities are provided (Table 9 below), with a clear acknowledgement of cross-curricular links with other aspects of the SESE area of the curriculum. The writers establish a rationale for the adoption of an integrated approach from the outset, stating that this "…provides cohesion between the concepts, skills and objectives of the SESE Primary Curriculum" (p. 1).

Table 9: *Window on the World* Junior Infant Activity Book

Activity Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Engage child in conversation about themselves. Draw self.	Discussion of identity.	2	2
2	Engage child in conversation about children depicted in four photographs.	Discussion of the changes that occur from babyhood to childhood.	4	4
3	Engage child in conversation about how they have grown. Distinguish between large and small items depicted.	Identification of changes that have occurred from babyhood to childhood	6	6
4	Engage child in conversation about three events in a story.	Child recounts the story from the pictures, identifying sequence of events	3	3
5	Engage child in conversation about teddy family depicted.	Child explores and discusses how family members care for each other.	6	6
6	Engage child in discussion about members of family and compare relative ages, using teddy family depicted as resource.	Exploration of identity within family context and language development based on relative ages of family members.	4	4
7	Engage child in conversation about three events in a story relating to Easter.	Child recounts the story from the pictures provided and identifies and discusses the sequence of events.	3	3
8	Engage child in discussion about family members.	Language development on theme of family.	3	3
9	Examination of photographs to explore modern and old clothes.	Examination of simple historical evidence to explore concept of change and continuity.	4	4
10	Complete drawing of old and modern clothes.	Consolidation of language 'old' and 'new/modern'.	3	3
11	Engage child in conversation about three events in a story.	Child identifies chronology of story and draws picture.	4	4

The level of cognitive complexity of the activities can be described as varied, with significant opportunity for developing the key skills and concepts of time and chronology, albeit in a less than consistent manner. 4 of the 11 activities present opportunities for the child to engage in a process which facilitates middle-order and higher-order skills, involving thought, deduction

and a personal response from the child. This reflects the theories of Rogers (1979) relating to the value of using evidence in history teaching (section 2.2.2) above, and Sheldon's (2010) assertions relating to the value of encouraging children's questions as part of the process of "moving up" in their understandings. Yet, the potential of many of these activities for the development of temporal cognition has been underutilised, and a revision by the authors could greatly enhance the level of cognitive challenge provided.

The level of cognitive complexity of half of the activities can be described as predominantly literal in nature, involving low-order references and responses. These can be characterised as involving, in the main, observation and/or recall of detail or factual information. The opportunities provided for learning in relation to the development of time and chronology concepts is limited to 50% of activities. Interestingly, the text is devoid of assertions regarding the fulfilment of curriculum objectives or requirements, yet it appears to foster the key skills of time and chronology.

4.1.2: Third class level

The 5 extant History texts available for third class were examined. The data reveals that a similar pattern of marginalisation is observed (orienting principle 2, figure 11). Only a quarter of the textbooks were deemed to have a high level of potential for addressing temporality which was realised through the activity, as presented.

Collectively, out of 170 activities reviewed, such provision is attributed again, in the main, to *What a Wonderful World* (54%). Otherwise, over two-thirds of the activities (69%) were

deemed to have very limited or limited provision for temporal cognition. This data is presented in Table 10 below:

Table 10: Textbook provision for temporality at Third Class level (n=170)

Provision for temporality - Third class textbooks

- No potential (0%)
- Very limited potential (12%)
- Limited potential (57%)
- High potential realised (27%)
- High potential unrealised (4%)
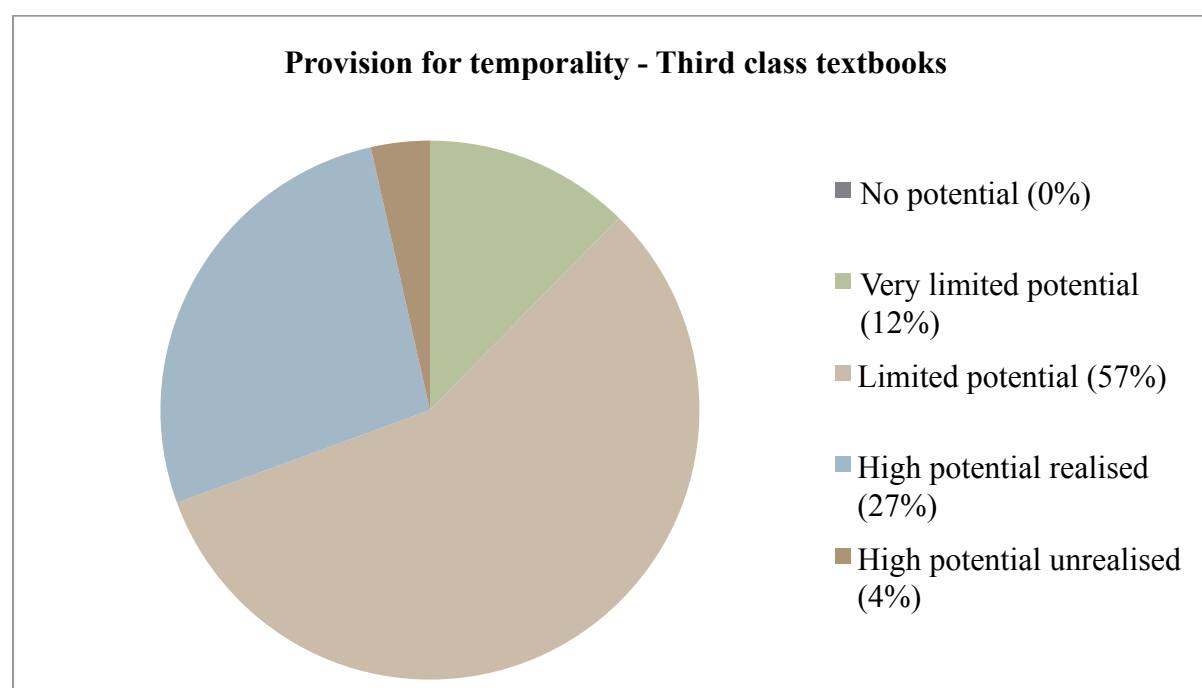
I am presenting data pertaining to one third class text here to illustrate how the evaluation was undertaken, while all remaining data is presented in Appendix 2 (Table 11: *History Quest 3;* Table 12: *Window on the World;* Table 13: *It's About Time, History Activities and Skills;* Table 14: *Earthlink*).

It is noted that the majority of publishers who offer textual materials at this level have deviated from the previous cross-curricular approach, incorporating activities in Science, Geography and History. Instead, each publisher approaches the work in chapter form, providing distinct units of work to be undertaken and completed over a set period of time.

4.1.2.1: *What a Wonderful World* **(Third Class), Folens (2009)**

Authors: Griffin, D and Sheehy, L.

In the introduction to this series of textbooks for levels 3 and 4, the authors assert their intention to provide a text that "… enable(s) children to develop their sense of time as historians". The content is set out over 90 chapters, encompassing learning in the three aspects of SESE. 25 of these address learning in History, and a topic-based model is utilised, though there appears to be very limited use of cross-curricular, multi-disciplinary approaches.

The analysis undertaken of this text reveals a very positive emphasis on the skills of "working as a historian", among them temporality. Every activity presents opportunities for this development, while the majority can be deemed to successfully achieve this objective. Surprisingly then, only 13% of student teachers cite this text as being in use in their classrooms, as outlined in section 5.4 below.

A small number of activities have unrealised potential. For example, the fourth activity (p. 20) engages the child in an interesting comparison between the child's own experience of their first day at school, and that of a child in the early 1960's, using the medium of story. Yet, such concepts could be assimilated and consolidated more effectively, had the author also utilised techniques that would allow the skill of empathy to be developed.

The approaches adopted fully comply with the curriculum requirements and include the use of timelines, personal writing (diary entries, poetry, etc.), a variety of drama techniques and personal expression through art.

Table 15: *What a Wonderful World* (Third Class)

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Exploration of child's personal and family history.	Child explores concept of family, using timeline and diary of events over period of school year.	3	3
2	Examination of clues.	Child works as a historian, using clues from evidence to tell story	4	4
3	Examination of evidence.	Child examines artefact to glean information.	4	4
4	A school story.	Child relates their personal memory of first day at school with that of story depicted (1964).	6	6
5	Grandparent's school experience	Child gleans information about past experience, using oral evidence.	4	4
6	The history of my school.	Child explores the history of their school, using documentary and oral evidence.	4	4
7	Life in Ancient Times.	Project-based approach, using investigation, empathy and timelines.	4	4
8	Life in the Past.	Project-based approach, using investigation, empathy and timelines.	4	4
9	Changing times – a kitchen 150 years old.	Picture perception, gleaning evidence, responding at a variety of challenging levels.	4	4
10	Picture perception Changing times – school and education.	Child compares and contrasts modern classroom and one over half century old.	4	4
11	Picture perception Changing times – work and clothes over past 100 years.	Child compares and contrasts modern classroom and one over half century old.	4	4
12	Being Famous.	Child identifies famous people in past and present.	3	3
13	Story of Anne Frank.	Child acquires information from text, photographs, sketches and timelines.	4	4
14	Exploring life of a famous person.	Child investigates topic and completes timeline of key events in person's life.	4	4
15	Life of Early Peoples.	Project-based approach, using investigation, empathy and timelines.	4	4
16	Exploring Myth/Legend – African/Irish	Exploration of story, using drawings.	4	4
17	Life in the past.	Project-based approach, using investigation, empathy and timelines.	4	4
18	Games and Pastimes.	Exploration of topic over three generations, using interview.	4	4
19	Changing Times.	Exploration of change that child has experienced in his/her lifetime.	4	4
20	Every Building has a History.	Local history investigation of site of historical interest.	4	4

The text places a significant emphasis on the child acquiring information relating to the topics from sources outside of the text. Little guidance is provided as to how this might be approached and sample sources are not recommended; this approach may be less acceptable to some teachers who prefer a structured, didactic approach, with texts which provide comprehensive outlines of the content to be taught.

The authors have placed considerable emphasis on the provision of educational activities that challenge children's thinking. Typically, questions are pitched to assess different levels of understanding, involving literal, inferential, critical and appreciative responses. Some activities involve a low-order response from the child of observation, recall of detail and consolidation of factual information. Additional challenge is provided by requiring middle-order personal responses and deductions. Further, the child is required to provide higher-order responses, arguing and supporting opinions, developing empathy with the characters and providing evaluations of whether life "in the past" was better or worse than that experienced by children today.

4.1.3: Sixth class level

All publishers who offer textual materials at this level claim to have produced material that reflects the principles of the revised Primary School Curriculum (reflecting the "policy and Power" principle of figure 11 above), including integration, activity-based approaches to learning and a menu-based curriculum, from which teachers select content suited to the needs of their school. There is a notable emphasis on the use of additional information sources to complement the level of information provided in the texts. Similarly, a key emphasis is

placed on the assessment of children's learning in history, a facet given little consideration at the two levels analysed above.

Of the 5 extant texts, the activities (n=148) were deemed to have weaker provision for temporal cognition, with a mere 11% identified as having high potential. The remaining 89% of activities had limited potential, and only 1 of the textbooks addressed temporality in a comprehensive manner - *Window on the World (Sixth Class)*.

Collectively, all the remaining texts at this level addressed temporality to some degree, though two displayed potential which was not realised. Interestingly, the high potential in the *What a Wonderful World* series at the lower two levels is not reflected here, with 87.5% of the activities in the 6th class text deemed to be at the "limited potential" level. This data is presented in Table 16 below:

Table 16: Textbook provision for temporality at Sixth Class level (n=148)

Provision for temporality - Sixth class textbooks

- No potential (0%)
- Very limited potential (0%)
- Limited potential (89%)
- High potential (11%)
- High potential unrealised (0%)
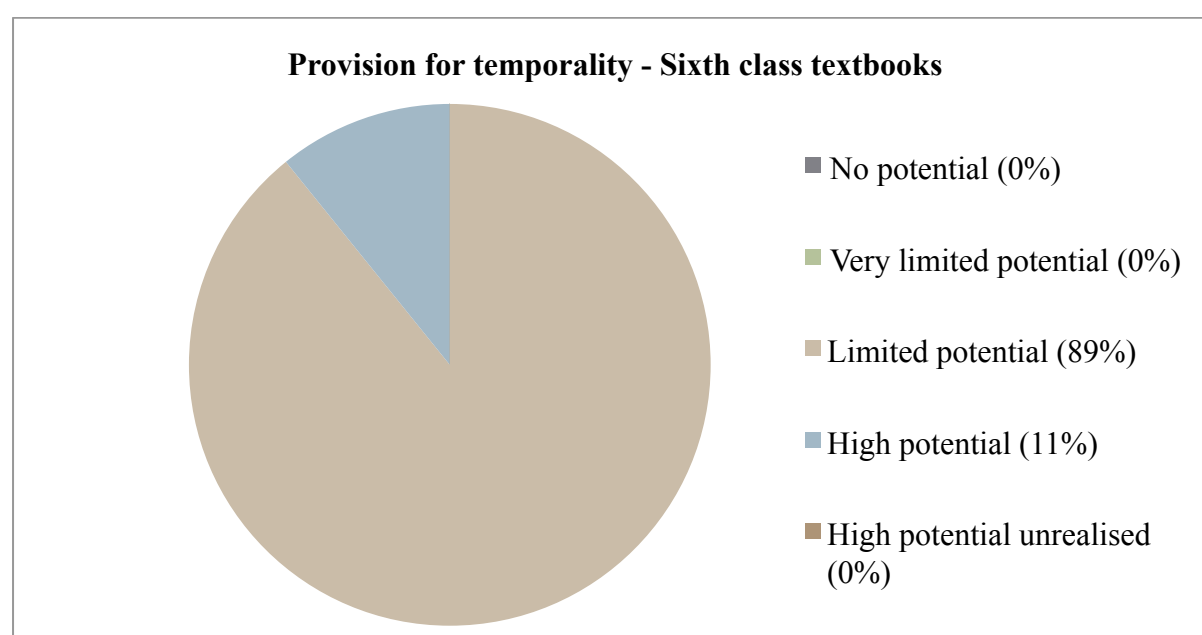
A sample of the data pertaining to one text at this level is presented here. Appendix 2 contains the remaining data (Table 17: *History Quest* 6; Table 18: *What a Wonderful World;* Table 19: *Earthlink*; Table 20: *Window on the World).*

4.1.3.1: *It's About Time, History Activities and Skills* (Sixth Class), Folens (2010)

Authors: Brennan, E. and Dundon, B.

The authors state that "… the core element of this series is the link between learning and the development of the history skills, as outlined in the History Curriculum" (p. 2). Later, it is claimed that the series "…develops an understanding of time and chronology" (p. 2) and an outline of the educational methods to be employed is provided, namely, comprehension exercises, cloze tests, true or false, multiple choice, 'crack the code', word searches, crosswords, matching exercises, brainstorming, map exercises, examining photographs and documents, board games, quizzes, timelines and "Did You Know?" activities. Interestingly, it is stated that teacher's notes are also provided to accompany the textbook, indicating that the authors have avoided a content-laden approach in the text in the 18 chapters delineated.

The authors make an overt claim that the text offers opportunities for the attainment of the skill of temporality, yet my analysis provides evidence of missed opportunities and little realisation of this claim. While timelines are presented at the beginning of 8 separate chapters, no reference is made to them in the text, and no activity is provided to enable children to cognitively interact with them. In some instances, the timelines are confusing and inaccessible, as no attempt is made to allow the child question what is meant by the periods in time, as depicted. For example, in Chapter 8 – World War 2 (p. 32), a timeline depicts the period 4000BC to 2000AD, with the statement "World War 11, 1939-1945" provided

underneath. There is no further reference in the text to this information or any attempt to assess the child's understanding of the concept of the timeline provided. This example is representative of an opportunity missed by the authors to develop and consolidate the child's concept of a timeline.

Similar opportunities exist, but remain underutilised, for the development of sequential understanding and chronology. In five subsequent chapters (p.32, p.59, p. 63, p. 72 and p. 76), the child is asked to number events in the order in which they occurred. Essentially, the child is asked to apply their new learning, and a high level of cognitive complexity is evident. Yet, there is little attempt to test understanding or assess the child's learning. The use of visual prompts, children's own drawings or drama, for example, would greatly enhance this process.

Table 21: *It's About Time, History Activities and Skills* **(Sixth Class)**

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Abraham Lincoln.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, word boxes, true/false statements, 'crack the code' and crossword.	3	3
2	Limerick City.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, word boxes, map and crossword.	3	3
3	Franklin D Roosevelt.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, word boxes, true/false statements and 'crack the code' reinforcement activity.	4	3
4	Fairs and Festivals.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, word boxes, true/false statements and 'crack the code' reinforcement activity.	4	3
5	Queen Maeve.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, unscrambles words, true/false statements and crossword.	3	3

6	People of the Tigris-Euphrates Valleys.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, matches sentences, 'crack the code' activity, word search and drawing.	3	3
7	North American Indians.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, word search, matching sentences, true/false statements, 'crack the code' activity, cartoon strip and crossword.	3	3
8	World War 2.	Child acquires and consolidates information, using visual and textual prompts, completes and numbers sentences in sequence, word boxes, true/false statements, 'crack the code', personal writing and unscrambles words.	3	3
9	The Revival of Gaelic Culture.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code', unscrambles words, number sentences in sequence, word boxes and true/false statements.	3	3
10	Parnell and Davitt.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, match pictures with caption, fact file, word box, true/false statements and crossword.	3	3
11	The Great Explorers.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code', matches pictures /word to caption, label picture, word boxes.	3	3
12	Women in 20th Century Ireland.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code' activity, word boxes and crossword puzzle.	3	3
13	The First Dáil.	Child acquires and consolidates information, using visual and textual prompts, unscrambles words, completes sentences, 'crack the code' activity, fact file, crossword puzzle.	3	3
14	Northern Ireland.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code' activity, sequence events, true/false statements, word box and match captions.	3	3
15	Ireland (1960-2000).	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code' activity, sequences events, unscramble words, true/false statements, word box and match captions.	3	3
16	Marvels of Engineering.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code' activity, matching activity, unscrambles words, word box and fact file.	3	3
17	The GAA.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code' activity, fact file, true/false, sequence events, and word search.	3	3
18	Dublin.	Child acquires and consolidates information, using visual and textual prompts, completes sentences, 'crack the code' activity, word search, true/false match clues, sequence events, and categorise.	3	3
19	Quiz.	Assessment of new learning, using questions, visual prompts.	3	3

While reference is made to dates and periods in time, there is minimal opportunity for critical engagement with the information. A key strength of the textbook is its attractive design, including the abundant use of appealing, informative cartoons and photographs. The authors provide interesting well-researched content, supported by interesting imagery, to provide a comprehensive outline of information in relation to each of the topics explored. A wide range of activities are provided, which rely heavily on the child's interaction with the text. There is little encouragement to supplement the learning with the use of additional resources and overall, there is a predominance of literal questions which allow little cognitive engagement by the child at the middle and higher-order levels. Interestingly, the text was not in use in any of the 150 classrooms cited by respondents to the survey, as presented in section 5.2.4 above. The text is a good example of an adult construction of temporality which clearly conflicts with the child-centred developmental approaches to creating a sense of "deeper time" outlined in section 2.5 of my literature review above. It also reflects the power and policy orienting principle that I highlighted in figure 11.

4.2: Conclusion

The data provides emphatic evidence that authors and publishers of Irish history textbooks vary greatly in their interpretation of the principles of the primary school curriculum, and some fall into the category of what Valverde et al. (2002, section 2.2.11) term 'poor exemplars' of the vision of translating curriculum policy into practice. Clearly, some fail to embody the guiding principles of the curriculum and mirror them in the programme of study they establish.

Such a conclusion is congruent with Cohen's assertion (section 2.2.7) that while teachers may understand what is intended, and believe they are teaching it, in fact, they may not be doing so. There are marked divergences in the textbook approaches to temporality, and little uniformity of approach to its development from one class level to another, or between one text and another in the same series. This issue is of concern, given Schwille et al.'s assertion (section 2.2.7) that teachers teach what is in the textbook. It indicates an essential need for better regulation of texts and guidelines to ensure that the curriculum principles are reflected in any resources provided.

While Looney (2003) concluded that textbooks are more influential than the officially written curriculum in making decisions about classroom teaching (section 2.5.4), it is still difficult to determine the degree to which history texts influence the programme of learning provided by teachers. Levstik's (1989) and McKinney and Jones' (1993) theories are recalled here, as explored in section 2.2.3 above, pertaining to the need for children to experience a wider variety of resources other than just history textbooks in accessing historical information. Similarly, Richgels, Tomlinson and Tunnel's (1993) distinction between the use of "trade books" and expository textbooks (section 2.2.3) as aids to history teaching is relevant here. Both arguments point to a heightened need for criteria to be determined for analysing the content and approaches of both categories of text. The study now begins to address the dearth of available data in this regard by presenting claims that emanate from the student teachers' experiences of being socialised into the prevailing culture for developing temporal ways of knowing, as reflected in their placement experiences. Interestingly, the students identified poor alignment between the textbooks and the constructivist principles they were required to reflect in their teaching approach.

Chapter 5:

"Free reign to choose as I please";
A survey of student teachers

5.0: Introduction

This chapter addresses the manner in which student teachers are apprenticed into the prevailing practice of developing children's temporal ways of knowing, including the use of textbooks, as reflected in their placement experiences. It contributes further insights into research question 1, through the examination of the manner in which they navigate this social construction in developing children's temporal cognition.

The quantitative and qualitative data that I present challenges evidence of an anecdotal nature that history textbooks and workbooks are in widespread use, and heavily relied upon in schools. Contrary to the textbook reliance theories of Floden et al. (section 2.2.7 above), and Wagenaar et al. (2010), the data indicates that fewer texts were in use than might have been anticipated. Interestingly, even where there is an established practice of using history textbooks and workbooks, the study found that the students relied very little on them, were judicious in their use if they were used at all, and demonstrated skill and confidence in utilising a far greater range of resources to suit their needs.

Their choices reflect a keen awareness of the limitations of these resources, and many of their comments demonstrate an understanding of two of the orienting principles that I have set out in Figure 11 above - the neglect and marginalisation of temporality in the texts, as well their limited ability to embrace the embeddedness of such learning in the current life worlds and changing cultures of the children (Hawkey, 2010, section 2.2.2 above). Additionally, the students' own personal experiences of being taught history are explored, for their relevance in influencing their current approaches to the work. However, it is also important to note a limitation of this study: the data generated was confined to student reporting of the pattern and practice of textbook use. It was beyond its scope to glean data directly from teachers.

5.1: Response to survey

A high response rate was forthcoming, exceeding the generally accepted response rate of 70% for this type of survey (Johnson and Christensen, 2008). No doubt, this was facilitated by the direct distribution of the questionnaires to the student teachers at the end of lecture times by a third party. It is likely to have been influenced by what Kolar (2008) refers to as the cooperative relationship that was cultivated previously with respondents.

The response rate is outlined in Table 22 below.

Table 22: Student teachers' response to survey relating to history textbooks and workbooks (UG: n=93; PG: n=45)
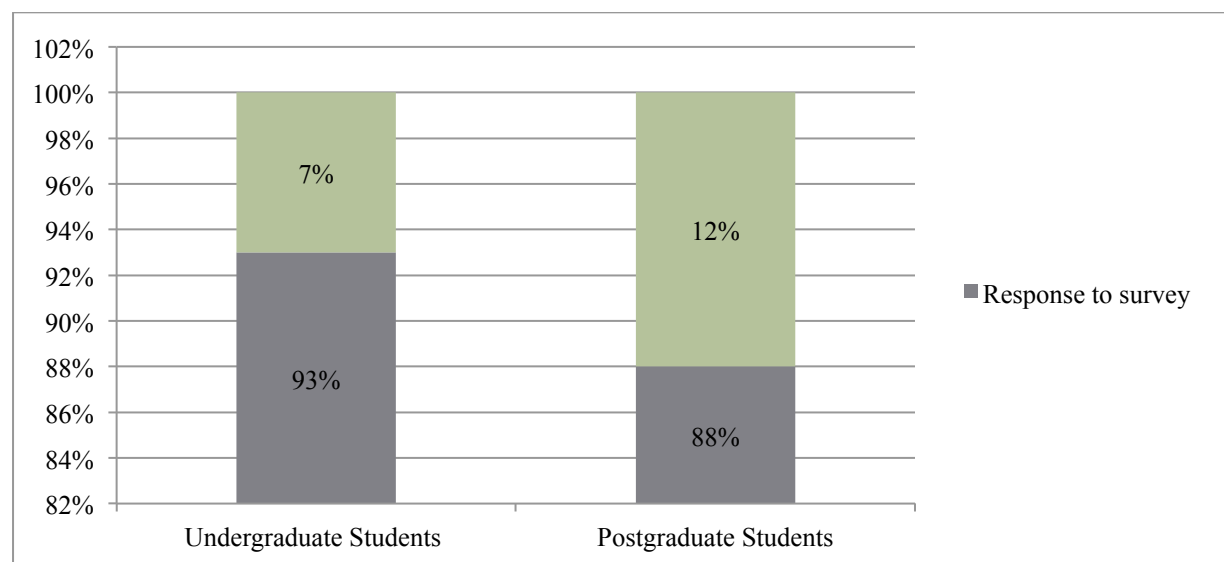
5.2: Class levels taught by respondents

The data generated by final year undergraduate students relates to their experience of teaching classes across the full spectrum at primary level, over a four week period, in schools they personally selected. The data generated by postgraduate students relates to their final year experience of teaching at the senior level only, over a two week period, in placement settings which were not personally chosen. Both cohorts of respondents were undertaking

their placement in an examination situation, and it is acknowledged that more progressive practice might be reflected under such circumstances. The class levels taught by respondents are outlined in Table 23 below.

Table 23: Class levels taught by respondents (UG: n=92; PG: n=44)
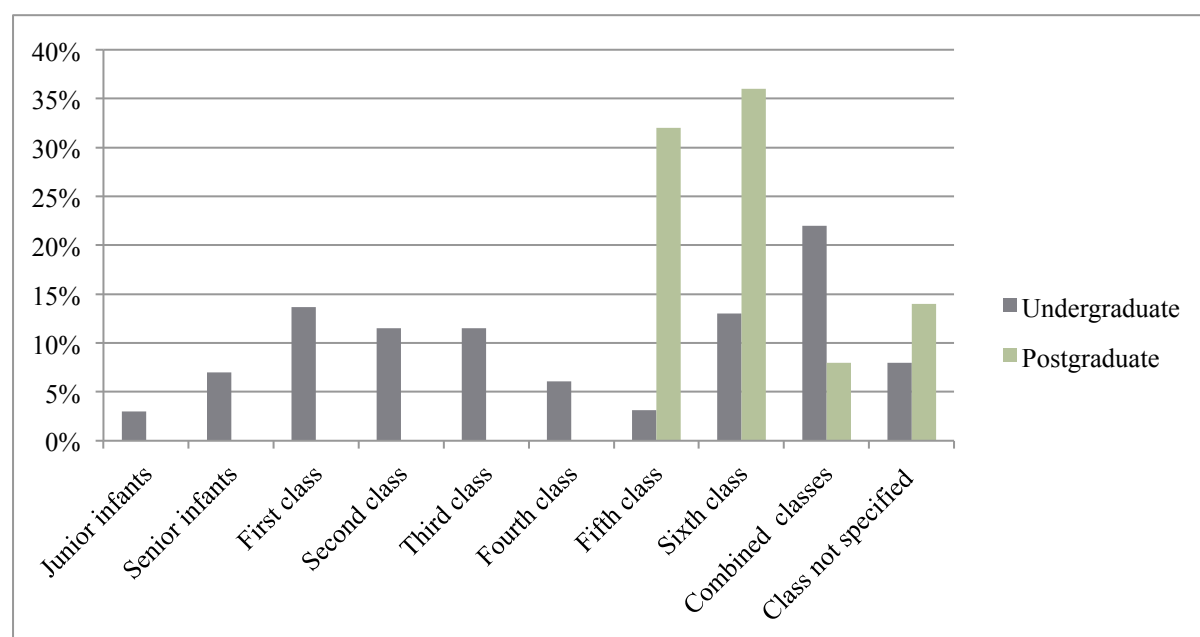
5.3: History textbooks and workbooks in use

The data generated indicates a significant difference in the teaching and use of textbooks experienced by postgraduate and undergraduate students. In over half the classrooms (53%) where the undergraduate students undertook their placements, a textbook was in use, while one third of these students (32%) had access to a class workbook. For the postgraduate cohort, less than one third (27%) of the classes used a textbook and 39% used a workbook.

Yet, a very low percentage of students were actually required to use the texts as a primary resource, where they were in place, with just 13% of undergraduate students, and 7% of postgraduate students, being instructed to use it: "...I had free reign to choose as I pleased".

Only 11% of undergraduates were requested to use a workbook, and none of the postgraduate respondents were required to do so.

This is evidenced in Table 24 below.

Table 24: History textbooks and workbooks in use (UG: n=93; PG: n=45)
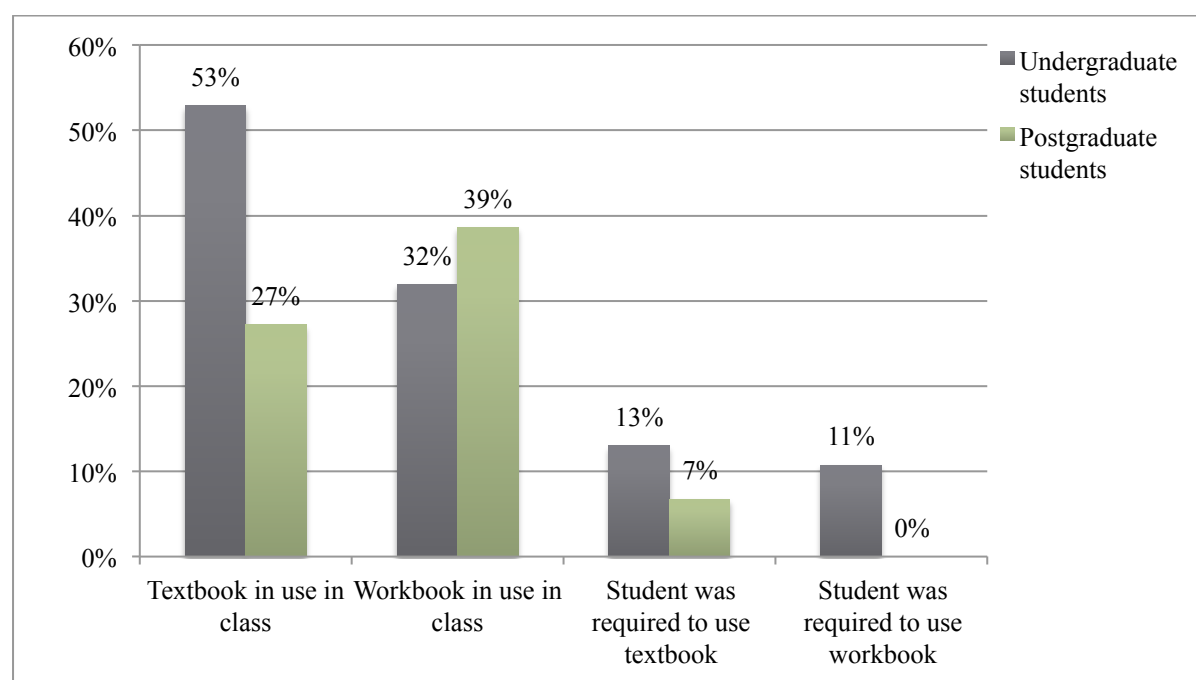
The level of professional expertise and maturity of the students in their final year is likely to have had a bearing on this finding, while students were also undoubtedly keenly aware of the requirements set for them for the placement to model best practice while in this examination situation. The qualitative data supports such a conclusion: both cohorts displayed a level of skill and confidence in utilising a comprehensive range of approaches and methods to teach their history lessons, employing a wide range of self-produced materials that suited their needs. The students relied very little on the use of textbooks and workbooks in history, citing the textbooks' tendency to poorly reflect the guiding principles of the history curriculum:

- a dearth of activity-based activities that engage children in the learning process;
- a failure to provide an adequate content base for the lesson;

- poor facilitation of group-based approaches;

- poor integration with other areas of the curriculum;

- poor provision for local studies approaches.

Respondents from both cohorts are emphatic that they find the range of educational methods that are outlined in the textbooks generally to be of limited assistance in meeting their requirements. This finding is reminiscent of the "policy and power" principle permeating my study (figure 11) and it also emphatically concurs with some of the shortcomings identified in the content analysis of textbooks, as presented in chapter 4 above.

Class teachers who facilitated the placements appear to recognise this discerning approach; a very small minority of undergraduates were asked to use the textbook in an ancillary manner, making reference to it at the end of a lesson only, or if it was deemed helpful. Likewise, the vast majority (93%) of postgraduate students were not influenced by teachers in their use of resource and only one respondent was instructed to use the available textbook:

> As the school was expecting a Whole School Evaluation, I had to stick to the planned topic, as outlined in the book.

These views have implications for publishers and authors of history textbooks. They point to a strict alignment by student teachers, albeit in examination situations, of resources with the principles underpinning the history curriculum, which clearly espouse the constructivist paradigm (section 1.1 above). Where the students perceive divergence in this regard, the textbook is not used. This underscores the conclusions in section 7.2 of this study that many of the texts fall far short of Stray's (1994) aspiration (section 2.2.8) that they should be "an authoritative pedagogic version of an area of knowledge" (p. 2).

A Chi-square test for independence was carried out to determine if a relationship existed between the use of a textbook and whether the students were from the undergraduate or post-graduate cohort. Results indicated that no relationship existed between textbook use for UG students over PG students (the P value is 0.436743). A similar Chi-square test reveals that no relationship existed between the use of a workbook, and whether the students were from the undergraduate or postgraduate cohort (the P value is 0.46). This statistic is significant, in that it indicates that both UG and PG students are equally discerning in their use of textbooks and workbooks as resources.

Respondents outlined a wide variety of alternative methodological approaches and resources that they frequently utilised to teach their lessons.   Significantly, they stated that their chosen approach was determined on the basis of suitability in a given situation. The range is listed in table 25 below.

Table 25: Alternative resources and approaches (UG: n=93; PG: n=45)
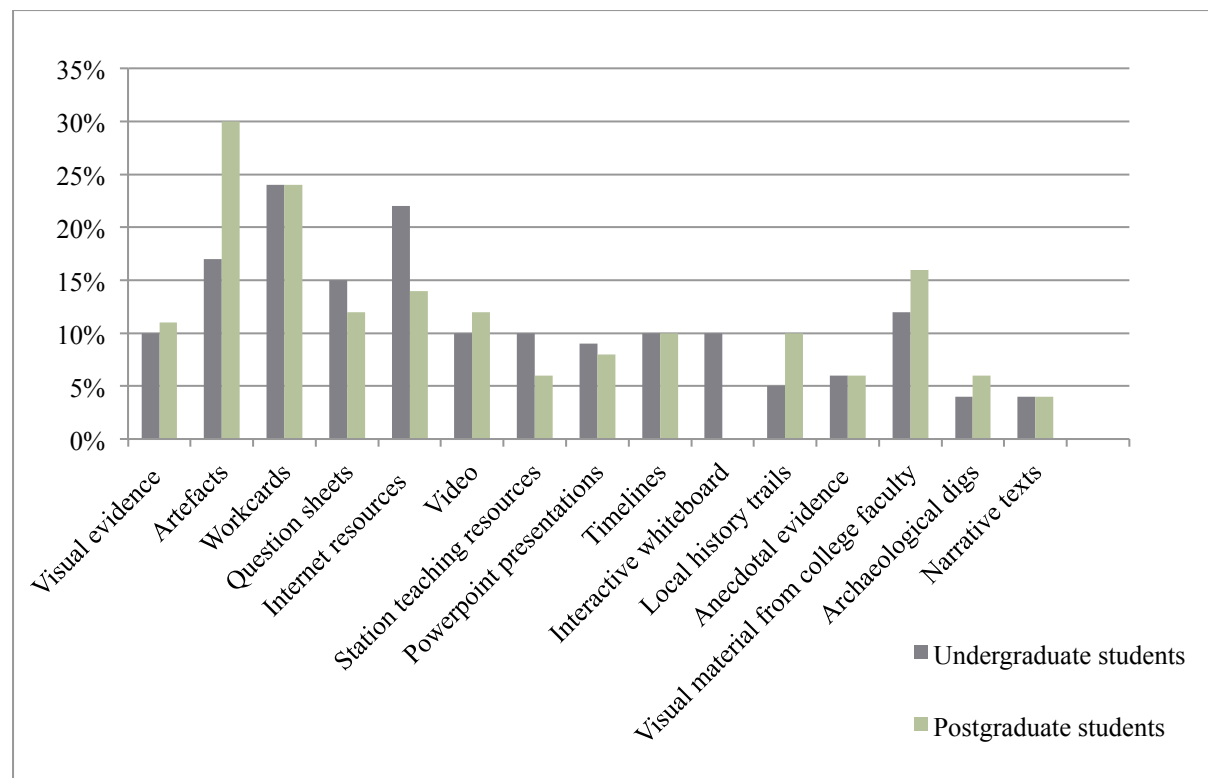
The age profile of UG and PG students may have had a bearing on the choice of resources utilised. Interestingly, PG respondents (all aged between 23 and 39 years) did not use interactive whiteboards in resourcing their lessons, which may reflect a reticence emanating from their perceived lower skill and expertise in this area. UG students, on the other hand (all aged 19-21 years), appeared to more readily use ICT and internet resources, indicating a greater ease and familiarity with such media-based approaches. This can be attributed, to some extent, to the increased input they receive in their 3-year ITE programme, relative to the PG cohort, whose course is truncated (1.5 years).

5.4: Prevalence of textbooks and workbooks in use

The combined data from the two cohorts indicates that, where history textbooks and workbooks are utilised, the *History Quest* series is the most prevalent (43%) in use across all the class levels, with the *Earthlink* series in second place (28%). The frequency of use of each available textbook is indicated in Table 26 below.

Table 26: Prevalence of textbooks and workbooks in use (both cohorts combined, UG: n=93; PG: n=45)
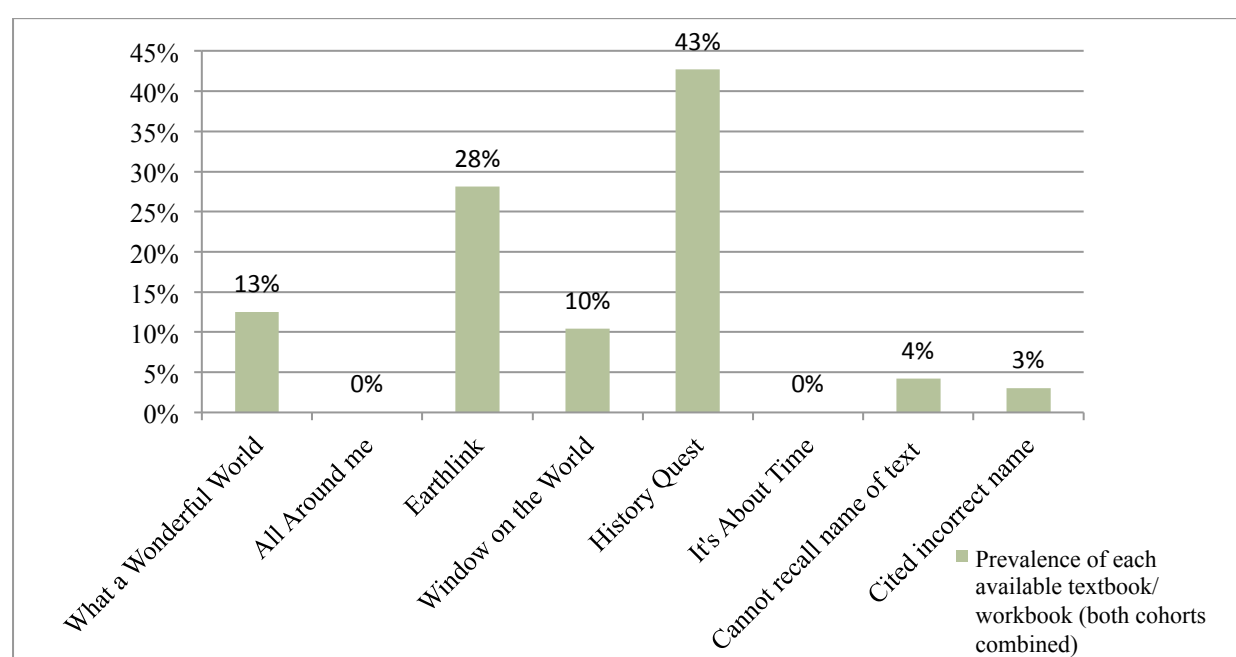
Notably, two particular texts, *All Around Me* and *It's About Time*, were not in use in any of the classrooms. In the review of textbooks presented in chapter 4 above, shortcomings were identified in both these texts, most notably their inadequacy in reflecting the principles of the revised curriculum. This may be a reason for their poor uptake by teachers. A minority of students (3%) cited an incorrect name of a textbook, while 4% could not recall the name of the text, even though one was in use.

Notwithstanding the limitations identified at both third and sixth class levels (chapter 4 above), the *History Quest* and *Earthlink* series are popular. The strength of the former can be attributed to the provision of well-researched content, which is likely to be a factor in its selection, while in the latter text, the inherent neglect and marginalisation of temporality (principle 2, Figure 11) is evidently not a deterrent to teachers. Interestingly, the remaining two series, *What a Wonderful World* and *Window on the World* were in use in only 23% of the classes, despite their high level of compliance with the requirements of the curriculum, and their strong provision for temporality.

5.5: Student teachers' perceived ability to teach history competently

Data was generated in relation to students' perceived confidence in teaching history, for the insights it provides into the manner in which they are likely to be influenced by the school's prevailing culture that they encounter while on placement. Significant disparities exist between the data reported by the two cohorts. 52% of UG students said they did not feel they possessed the required knowledge base to feel comfortable in teaching the subject, with 48% saying they did. 38% of PG respondents reported that they did not have the required knowledge base to teach history, with 62% saying they did. A factor likely to impinge upon this finding is the diminishing level of uptake of history as a subject as respondents

progressed through levels of schooling: 53% of the UG, and 58% of PG respondents, chose history as a subject at Leaving Certificate level, while a smaller number (30% and 16% respectively) opted to study it to degree level.

Clearly, this has implications for their content knowledge in history and is likely to influence their reliance on additional sources of information in their future planning of history lessons, among them textbooks. Such a content deficit is also likely to make them more susceptible to the influence of more experienced teachers and their practices. A tendency to conform to the prevailing values and practices in a school setting was highlighted by Barton and McCully (2010, section 2.4.6 above), who argued that resisting such practice requires a conscious sense of purpose.

Data relating to respondents' perceived knowledge base in history is outlined in Table 27 below.

Table 27: Student teachers' perceived ability to teach history competently (UG: n=93; PG: n=45)
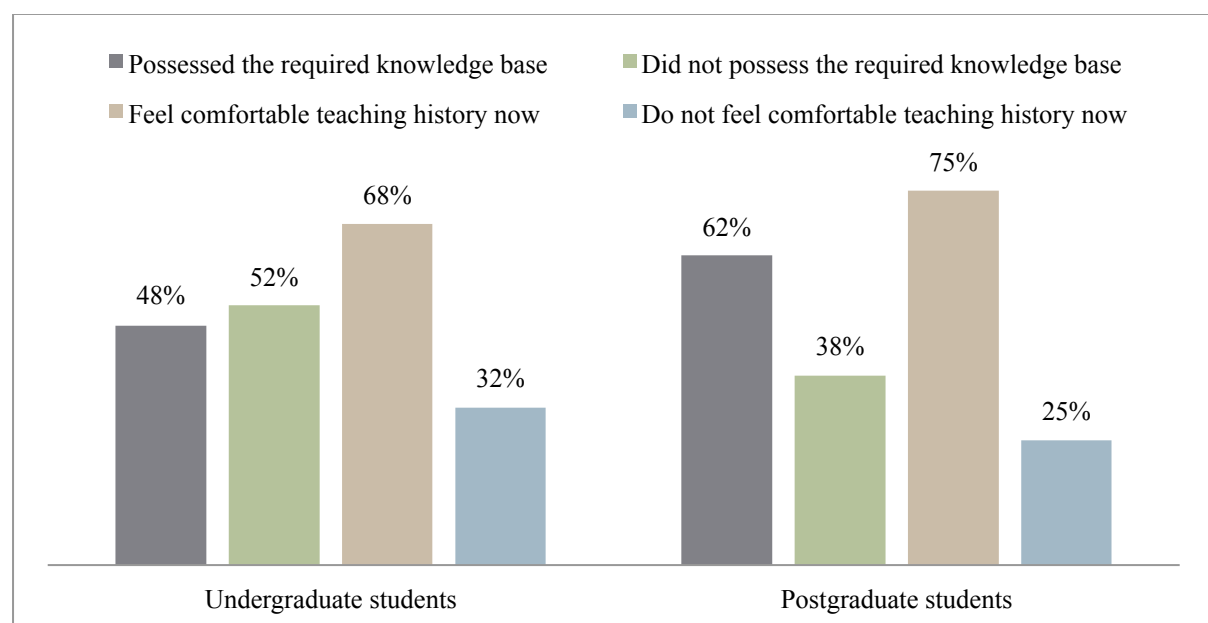
One aspect of appropriation practice that my study set out to examine is the degree to which student teachers replicate the pattern of textbook use established by teachers. My study demonstrates that student teachers do not conform to the prevailing school practice of textbook use as a primary resource, but rather, utilise a wide range of alternative sources, as outlined in Table 25 above. Respondents were skilled and proficient in their creation and use of resources that worked for them, while readily identifying textbook approaches that were not. The fact that all respondents were operating under examination conditions inevitably heightened this consciousness.

This claim concurs with a finding of a recent longitudinal survey (2009) conducted by teacher educators with student teachers (n: 1114) in all teacher education programmes on the island of Ireland, by the Irish Association for Social, Scientific and Environmental Educators (IASSEE). It showed that student teachers became more positive about the teaching of history as a subject as they progress through their ITE programmes (p.39). An increased expertise and familiarity with a range of methodological approaches during this time is cited as having a constructive impact on their attitudes and on practice. While 28% of students in the IASSEE study (2009) felt comfortable about the teaching of history on entry, this had increased to 50% on exit. This figure is lower than the figure cited in my study. My data reveals that, despite the content deficit, over two thirds of UG students (68.4%) and three quarters of PG students (75%) feel comfortable teaching history at this end point in their student programme. Inevitably, students' increased pedagogical content knowledge as a result of their programmes of study, as outlined by Shulman (1986, p. 9), is likely to have been a significant factor in their perceived comfort in teaching the subject.

5.6: Student teachers' enjoyment of being taught history

Both cohorts of respondents in my study were favourably disposed towards history, citing high levels of enjoyment with the subject during their personal school experiences. At UG level, 76% enjoyed history at primary level, while 56% enjoyed it at post-primary level. At PG level, 80% of students had an enjoyable experience of being taught history at primary level, while 58% had a positive disposition towards it at second-level. These are interesting statistic, given the ages of respondents. None of them were taught the revised Irish history curriculum, and their experiences of the 1971 curriculum would have been significantly at variance with the approaches that they are required to adopt now. This data is represented in Table 28 below.

Table 28: Student teachers' enjoyment of being taught history (UG: n=92; PG: n=45)
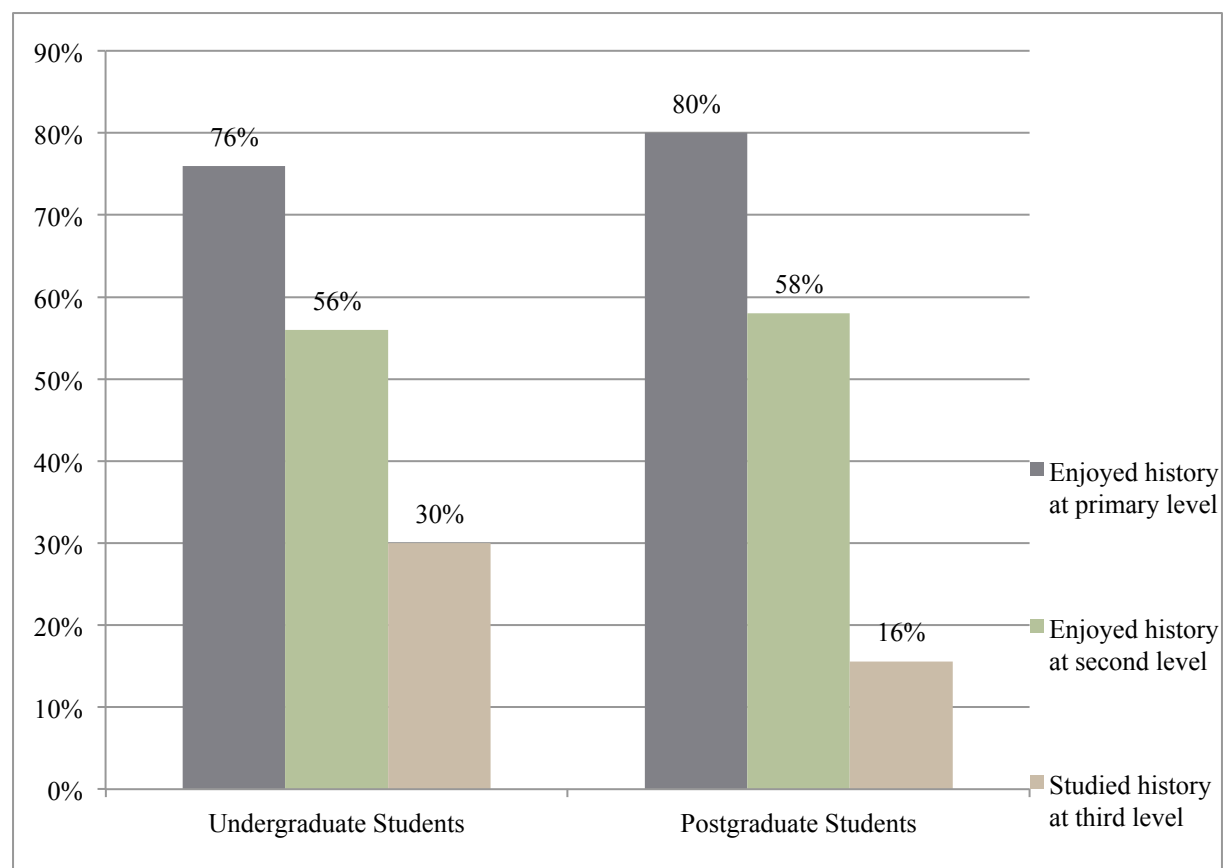
This finding is far more positive than student teachers' experiences of primary history, as cited in the IASSEE survey. In it, Waldron et al. report that just over 50% of respondents had a positive experience of the history methods and learning environment that they experienced at primary level, which they attributed to the interesting, participative, fun nature of classes. Conversely, lack of "fun", and poor variety in class activities, was commonly stated as a deterrent by 42% of the respondents.

The IASSEE survey (2009) also points to the particular influence of class teachers in socialising students into the available culture in the school for teaching history. Over a quarter of respondents cited teacher influence as significant in determining how they perceived history as a subject, with 16% having had positive, and 11% having had negative experiences.

A longitudinal study by Guyver and Nichol (2004) examined the strong influence of the experiences student teachers had of being recipients of history teaching and how they viewed themselves as history teachers later. Notably, however, respondents in my survey did not appear to be unduly influenced by the practices of the class teacher; they confidently navigated the curriculum challenge of setting children to "work as historians", using a plethora of approaches to embed the learning in the life world of the child (principle 3, figure 11). This finding is not surprising, given that all respondents are in their final year of study, having completed many associated courses, and are adept at using ICT and other resources to acquire and deliver content knowledge. Yet, it contrasts sharply with the findings of Harnett and Nichol (2011), who determined from their survey of history teaching at primary level, that the overwhelming majority of trainee primary teachers have minimal training in how to

teach history, attributed in the main to the low "teaching capital" (p. 24) of Newly Qualified Teachers (NQTs) who receive minimal input in the area during their ITE programmes.

5.7: Conclusion

In further addressing the first of my research questions, this study demonstrates that student teachers do not conform to the school's prevailing practice of textbook use when providing opportunities for developing children's temporal ways of knowing. They choose to avoid using them as exclusive tools with which to mediate the curriculum, and they individually formulate activities that engage children more readily in developing the skills of "working as a historian", among them, temporality. They demonstrate a keen awareness of the textbooks' neglect and marginalisation of these skills (principle 2, figure 11) and they appear to reflect an ability to clearly distinguish between sources that provide historically accurate accounts, as opposed to fictional reproductions, as reflected in Levstik's concern (1986, explored in section 2.2.3 above). In reporting a perceived deficit in their content knowledge, they did not appear to look to textbooks for a solution; rather, they demonstrated skill and confidence in accessing a wide array of sources and resources in meeting their overtly stated objective: curriculum compliance.

This Irish data supplants existing anecdotal evidence to the contrary, and it further augments extant research relating to factors which influence uptake of history as a subject, as well as the manner in which it is taught in schools. Related data, acquired directly from class teachers, would greatly enhance this evidence base.

Now, the voices of children are heard, with an examination of the cognitive-developmental and diverse sociocultural influences on their temporal ways of knowing.

Chapter 6:

The voices of children; school-based qualitative interviews

6.0: Introduction

This final strand of my study seeks to directly address the third research question pertaining to the insights the cognitive-developmental and sociocultural perspectives on learning have to offer in understanding children's temporal ways of knowing. The data and claims emanating from it contribute significantly to the related extant research which has been delineated in chapter 2, and significant convergences and divergences are identified. My study offers a broader, more deeply cultural view, taking due cognisance of the embeddedness of such learning in the life world of the child, with clear implications and challenges for curriculum and pedagogy (reflecting the overarching principles 1 and 3, as set out in figure 11 of my study).

The rich data derived from the qualitative interviews conducted with 12 children reflects what Irwin and Johnson (2005) describe as the "pearls, pith and provocation" experienced when working in this context (section 3.4.1). Yet, it provides emphatic evidence that young children are capable of embracing aspects of temporal cognition within the curriculum, even in the early years of education. In addition, my study examines children's personal experiences of time in their daily lives. Informed by the four-element model proposed by Docherty and Sandelowski (1999) in ensuring the "faithful rendering of childhood experiences" (section 3.4.1), a framework for analysing the data was designed to reflect the extensive range of elements of temporal cognition that require consideration, as delineated in section 3.4.3 above.

An inductive, qualitative approach has been adopted in analysing children's responses to the stories used to generate discussion on the topic of time. The analysis is undertaken from two

perspectives, the cognitive-developmental and the diverse sociocultural dimensions of children's temporality, and based primarily on the evidence derived from the recordings of children's discussions. All responses which contained references to time were extrapolated from the general discussion, then categorised according to the headings identified in the framework. This full range of data is presented in Appendix 5. The 9 cognitive-developmental variables identified earlier (Figure 18), as well as the 6 sociocultural variables (Figure 19), provide the basis for these categorisations.

The children's responses were examined to determine their understanding of the time-related dimensions of the story. These themes are examined for their influence in framing children's sense of temporality over the period of their primary schooling. The responses gleaned from each of the 6 school-based interviews are now comprehensively analysed in turn, at each of the three levels concerned. Rather than merely enumerate the frequency of different categories of responses, I endeavour to examine and interpret the nature of the cognition presented in each of the responses, with the belief that such analysis greatly enhances the understanding of each child's particular level of temporal cognition, while identifying significant influences on their learning. Interestingly, the data points to the strong link between linguistic competence and the development of temporal cognition.

In addition, a comparative analysis is undertaken with the seminal work of Hoodless (2002) with English primary school children, thus enriching the findings. Her study examined children's awareness and understanding of the intricate ways time and chronology are used in storybooks, as well as how such time-related terms and related understandings can be reflected in children's conversations. However, divergences in the approach and findings of the two studies are also noted. Hoodless (2002) undertook her study with children aged 3 to

9 years, while my study extends over the wider age group, 5 to 12 years. The English study was conducted over a longer period of time (1996-1998) with 35 children, in larger groups of 3 - 4. Hoodless (2002) identified a more restricted number of categories of responses when analysing the data: chronology – time in the past, deictic and other temporal terms, responses involving sequencing; parallel times and anachronies which were reflected in the children's language. Significantly, her analysis was largely confined to enumerating the frequency of responses of children within these four categories.

6.1: Identifying cognitive-developmental facets of children's temporality

6.1.1: Playing with time - responses of Junior Infant children

Interview 1 tool place in school A with 2 junior infant children, both aged 5, one male (pseudonym 'Donal' - D) and one female (pseudonym 'Helen' - H). As the interviewer (I), I was accompanied by an independent observer provided by the school (O). Interview 2 took place in school B with 2 junior infant children, both aged 5 also, one male (pseudonym 'Thomas' - T) and one female (pseudonym 'Moya' - M).

Category A: The emerging use and production of temporal terms

From the outset, a striking feature of their discussions was their urge to play and experiment with time-related language. As the purpose of the story-reading exercise was explained to them, they spontaneously counted numbers at random and repeatedly did so at regular intervals while the story was being read. Reflecting the findings of Busby Grant and Suddendorf (2010, section 2.6.2.1 above), the four children appeared to be at ease with the skill of counting, and they enthusiastically tried to use words and phrases that described time

intervals. Frequently, these utterances were presented randomly and there were many instances where the children appeared to be unaware of the correct conventions for telling the time of the day. In the data, there is ample evidence of the emerging nature of the children's production of temporal terms, and examples of children's experimentation with temporal terms abound:

> School A: D: My baby brother's name is Jake and he's only 1 and a half. H: I'm 5. I: You're 5? So how much older are you now than your baby brother? D: Ahm, 5 and nearly 6.

> School B: I: What time do you think it is? D: It's 2 to 6.
> T: 8. I: 8 what? T: 8 ahm, 8 o' clock.

The value of such experimentation with temporal language in the emergence of temporal cognition is highlighted by Hoodless (2002) , and may be reflected in the following excerpt which appears to indicate that, as children express the temporal terms out loud and use them in their active vocabulary, it affords opportunities to engage with, and challenge, their meaning.

> I: H, How long do you think he was asleep if he was asleep all Winter?
> H: 16 hundred years.
> D: H, it might be hundred days.

Child D demonstrates an ability to modify his use of the term "hundred" after he has experimented with it twice earlier. This observation also reflects the findings of Fox (1993) who observed young children's readiness to extensively experiment with language in their own storytelling.

Category B: The production of conventional temporal terms

The children are spontaneously using conventional temporal terms such as "day", "night", "Summer", "Winter", "summertime", "daytime", "night time", "every day", "dark", "bright". Such use is congruent with the earlier research of Tartas (2001) and Friedman (1986) in relation to children's production of temporal terms, as set out in Table 1, section 2.6.2.1 above. Interestingly, there were marked differences in the range of temporal terms used by the children in the two different schools. Congruent with Barton's (2001) assertion that the role and value of historical understanding can vary dramatically in different settings, (as delineated in section 2.2.3 above), children in the socio-economically disadvantaged setting used a more restricted range of linguistic terms than their counterparts in School B.

Clock time is referred to informally by the children in both schools, and the children used very specific language about the time of day in which the events in the story took place. This mirrors the findings of Hoodless, who identified such a pattern with some pre-school children in her research. Measurement in hours and minutes is featuring frequently in the children's talk. It would appear that the children understand the significance of these terms as time markers, while there is ample evidence in my study that such terms are not fully consolidated. This resonates with De Groot-Reuvekamp et al.'s theory (2014, section 2.2.3 above) that such learning involves a sense of objective time, as well as subjective time that is personally experienced. Yet, in their experimentation with such language, there is evidence that they began to be more precise and specific in their use of terms after having the opportunity to listen to one another, as exemplified in this excerpt:

I: How long do you think they were asleep?
H: For hundreds of times.
I: Were they? They were asleep all winter, how long do you think that was?
D: A hundred.

This example resonates with the findings of Paolitto (1990) who determined that by the age of 6, there is a discernible development in children's language generally. It also reflects Shemilt's (1984) theory relating to the value of children being afforded classroom opportunities to work out their own ideas and thinking (section 2.2.5.2 above).

> I: What time of the day do you think it is?
> H: 1 o' clock. D: 4 o' clock.
> I: Why do you say 1 o' clock, H?
> H: Because, it's a little bit of dark and a little bit of bright and that's when it is 1 o' clock.

Interestingly, for child H, the use of such temporal terms featured when she was reasoning about occurrences in the story and not merely recounting what she had heard.

Likewise, respondents in both schools demonstrated a spontaneous ability to sequence events and numbers. This is seen as a prerequisite to the use of conventional temporal terms, yet clearly, both children in school A require additional support in consolidated the sequencing process fully:

> School A: D: 8, 9, 10, 11, 12, 13, 14, 15, 60; H: 17, 80, 90;

> School B: I: Can you remember when your school play happened?
> M: I think it was this week. I: Or was it last week? T: I think it was last week. I: Ok, Was it a little while ago, or a long while ago? M: It was a long day.

Likewise, the children repeatedly exhibit an ability to experiment with linguistic knowledge:

> I: What time of the day do you think it is in that picture? H: 2 o' clock. I: Why do you say that? D: Because loads of sun (pause), loads of sun is 2 o' clock.

The two children in school B display a use of non-specific temporal terms – "Easter time", "play time", "Santa time", though there was no evidence of this in the responses of children from school A.

Category C: The development of sequential understanding, temporal order and cognition of chronology

There is evidence from the data that all children have a well-developed sense of sequential understanding and temporal order, yet to varying degrees, and their level of linguistic accuracy is not fully developed. This finding is in keeping with the investigations of Brown et al. (1975) and Mandler (1978) into the sequencing abilities of children aged 4 to 7 years (section 2.6.2.2, literature review). It also reflects the research findings of Hoodless who indicated that it is only by the age of 7 that children would be using linguistic terms fluently and competently. Congruent with Burny et al.'s theories (2009) relating to time-related competences in children, the young children in this study demonstrated an ability to recognise and label the time and link it to salient activities (p. 486).

> I: Why were the bees chasing him? D: Because he took their honey and they flew out of the tree and turned there and stinged him on the arm.
>
> M: After my Nana's, I'm going to be so excited, 'cos when I wake up in the morning, Santa comes.

However, the children appeared to be capable of recounting a sequence of considerable length and, interestingly, at times, this became a collaborative effort, with the pair of children prompting each other.

School A:
> D: Do you know what, they are caterpillars first and they twist and twist and they wrap around and they go to sleep and twist all around and then get wings and they fly and they turn into a butterfly.
> I: That's a lovely story. You are absolutely right. They do.
> H: They eat all their way out.
> I: They do?
> D: They do this and then they do this with their wings. They exploded.

School B
> I: Can you tell me what Timmy bear did before he went to bed? M: He was playing and then he brushed his teeth and then he went to bed.

Yet, a feature of the responses of all four children is their tendency to switch from one tense to another. While this reflects a sense of chronological awareness, it indicates that this aspect of their temporal cognition requires further consolidation:

> D: I'd ask my mam if I could go to the bees and my mam said no.

Although their technical accuracy is somewhat weak, there is evidence that the all understand the sequence of events. This finding concurs with the research finding of Clarke and Sengul (1978, section 2.6.2.2) who determined that even the children at preschool age had begun to use words relating to chronology.

Category D: The cognition of temporal distance in the past and temporal location

The findings suggest that children at this age level are beginning to acquire a sense of temporal distance in the past, yet they appear to be strongly challenged by an understanding of temporal location. The data also reflects the earlier findings of Friedman (1991) that young children from pre-school age have an ability to acquire knowledge of deictic terms. Such terms are used to place events in time and to indicate the time duration.

The data showed evidence of two diverging concepts of temporal distance in the past:

> School A: I: How long were his mom and his dad and Timmy Bear asleep? D: For one year. H: For one night.

> School B: M: Santa is coming … in 7 weeks. I: 7 weeks? T: My mom said it's only 2 weeks.

While the children are attempting to be precise about time measurement, they appear to lack the specific understanding of time duration/distance involved:

> H: Because, he's only a half age. I: What do you mean? D: Because he's only that size (indicating with his hands the same size as the picture of the teddy in the book).

However, there is evidence that some of the children are developing an ability to distinguish between longer and shorter durations of time, and that this aspect of temporal cognition is emerging. Again, this predates the expected developmental timeframe, as expressed by Hoodless (2002), that children aged 7 can demonstrate an awareness that "experienced" time is different from "real" or measured time.

M: A little 1 hour.

This resonates with Olafson's (1979, section 2.2.3 above) theory relating to the interconnectedness of developing time distinctions in the past, while relating it and referencing it to the present. Likewise, there is evidence of an emerging ability to distinguish between constant and variable durations of time, and child M reflects an elementary ability to qualify her concept of duration: "Because he is a silly bear sometimes, and sometimes he is good".

Category E: The relationship between autobiographical memory and temporal understanding

The data indicates that few responses at this age level reflect what Povinelli et al. (1996) describe as "autobiographical memory" (section 2.6.2.4, literature review). Yet, one of the children's comments reflects the subjective nature of their experience of time, where they draw on a similar, personal experience when engaging with the action of the character in the story. This echoes the arguments set out by Friedman (1993) regarding the significance of cyclical events as time markers in giving children a perspective on distance in the past, as outlined in section 1.4.2 of this study. It also resonates with Cooper's (2010, section 2.2.3 above) assertion that historical understanding is important in constructing a sense of belonging in time and place. This may reflect the emergence of a sense of autobiographical

memory, though the study conducted by Hoodless indicates that its emergence would not be likely to manifest itself until the age of 7.

> I: This is a very nice story about a teddy and his mom. T: He can't get to sleep. M: Neither can I sometimes.

Nelson's assertion (section 2.6.2.4, literature review) that the process of acquiring autobiographical memory is developmental is reflected in the increased examples from children's language at the third class level.

Category F: The relationship between temporal cognition and causal cognition

The responses show clear evidence of an emerging relationship between temporal cognition and causal cognition, showing how the children made connections about events in the story. The experiments involving the location of dolls conducted by McCormack and Hoerl (2007, section 2.6.2.5, literature review), is recalled here. They concluded that children aged 3-5 years come to understand a causal "arrow of time" (p. 29). It resonates with Levstik and Barton's (1996, section 2.2.3 above) theory relating to "intertexts" (p. 555) or interconnections between what is selected as clues by the learner, what is read or what is seen as sources of information. It also reflects a link found by Hoodless (2011) between chronological understanding and causation in her work with children. However, this data indicates that there are marked differences in the level of development of children's causal cognition.

> H: He's hibernating. I: That's a great big word, H, what do you mean? H: Because he has to go to sleep. Else he'll die and he has leaves on him to go to sleep and if he doesn't go to sleep, he'll die.

> I: Why did the animals go to sleep for the long Winter?
> M: 'Cos they are not Winter animals … they are Summer animals, bears.

The children appear to be teasing out a reason for their response. The data indicates that there is a predominance of the use of the term "because" in such causal reasoning and the term "and" was also used in the sense of "then" or "because" at this age level.

M: And when he turns off the light it gets dark and he gets scared.

Further, there were many responses from children in both groups which implied causation:

T: Morning time is when the butterflies are out.

This resonates with Sheldon's theory (2010, section 2.2.2 above), who points to the centrality of children's questions and opportunities for reasoning out ideas as part of the process of "moving up" (p. 12) in their understanding.

Category G: Understanding parallel time

The relationship between temporal cognition and causal cognition is likely to be a precursor to the development of a concept of parallel time; 2 of the 4 children at this level displayed an elementary understanding of the concept. Child H and child M indicated that they are reasoning about the relationship between events in two unrelated stories:

H: Harry Hedgehog gets to the worms first in the morning.
I: What time does Harry Hedgehog get to the worms in the morning?
D: 10 o' clock
H: No, 3 o' clock because bears come out at 7 o' clock.

M: I think that's his daddy and he likes to watch the sunset and I like to watch the sunset with my daddy.

The research of Povinelli et al. (1996, section 2.6.2.5 above) is recalled here, who observed that 4-5 year olds can reason that almost identical events happened to some other child at some other, unspecified point in time. Likewise, Barton's theory (2001, section 2.2.3 above) is evoked here regarding the central role of the family in children's understanding and engagement with time. The influence of family will be revisited again in section 6.3 below.

Category H: Awareness and use of anachronies in time

There is evidence that the children are beginning to understand the complex nature of anachronies at this point in the development of their temporal cognition. However, the data suggest that this understanding is confined to the use of prolepsis only, where the children demonstrate an ability to "flash forward in time".

> D: Because he ran away from his mam and dad and never stopped. His mam and dad knowed the bees would come after him again.

> I: Look, there's the beehive. I had one of those in my garden last year.
> M: Did you get stinged? I: No, I didn't. I was very careful.
> T: They would have chased you around the garden.

However, this finding contradicts the theory espoused by Hoodless that neither awareness or use of anachronies arose before the age of 6-7, a finding she attributes to children's acceptance of the story as being completely true. Interestingly, the data provides no evidence of their ability to use analepsis or flashbacks, or ellipsis, the gap in a passage of time. This finding may reflect young children's need to comprehend a simple sequence of events so as to connect with the story. It may also mirror the classic dilemma highlighted in Piaget's theories (1969, section 2.3.3 above), indicating that the child at the pre-schematic stage has not consolidated the theory of reversibility.

> I: When do you think he was doing that? M: After his picnic. I: T, what do you think? T: After the sunset. I: Or do you think it was before the sunset? T: No.

Mandler's more recent assertion (1978, section 2.6.2.2) is recalled here: when presented with interweaving story lines, children aged 4-7 years tended to recall them in simplistic, traditional order.

Category I: Ability to engage in temporal updating

Not surprisingly, given the cognitive complexities associated with it, my study revealed no evidence of children's language at this age-level reflecting the ability to engage in temporal updating. This is congruent with the research conducted by McCormack and Hoerl (2007) who claim that by the age of 5, children would possess only rudimentary skills of temporal updating abilities (section 2.6.2.5 of literature review).

6.1.2: Parallel time - responses of Third Class children

The children in this cohort were all aged 8-9 years. They engaged enthusiastically with the story "*The Night Horse*". Interview 3 tool place in school A with 2 third class children, both aged 8-9 years, one male (pseudonym 'Don' - D) and one female (pseudonym 'Catherine' - C). The interviewer (I) was accompanied by an independent observer provided by the school (O). Interview 4 took place in school B with 2 third class children, both aged 8-9 years also, one male (pseudonym 'Jake' - J) and one female (pseudonym 'Carol' - C).

Category A: The emerging nature of the production of temporal terms

Children's conversations at this level were characterised by an abundance of literal responses, with a predominance of one-word answers, and they were devoid of elaboration. They only developed their responses as a consequence of prompts and clarifications by me. There is much evidence that all children at this level require support and intervention to improve their store of temporal terms.

School A:

> He was silhouetted against the half-light that comes just before daybreak.
> I: So, what time of the day is it?
> D: Morning kinda, no daytime, daylight.

I: When is daybreak?
D: When day is breaking.
I: Yes, what time would that be roughly?
C: Probably around half 5.

School B:

I: When did her mum first hear the family legend of the Grove blacksmith, J?

J: When she was small.

The research of Tartas (2001) is recalled here (section 2.6.2.1 of the literature review), who found that the actual use and command of temporal terms emerged at different ages for different terms. Likewise, in her study of English children, Hoodless (2002) found that new temporal terms were used spontaneously by 8-9year olds, such as "ages", "never", "three quarters of …", although such terms were not prolific in this Irish study. While all children appeared to understand the terms when cited by me, only one child used such a term in their conversation: "a few".

Category B: The production of conventional temporal terms

Reflecting the findings of Friedman and Laycock (1989, section 2.6.2.1), the use of a diverse range of conventional temporal terms marked a clear development in the responses of 8 and 9 year olds in this study. Their store of passive vocabulary relating to time appears to be more diverse, reflecting a wider repertoire of conventional temporal terms, such as "dawn", "Winter", "Summer", "two weeks", "daylight", "Christmas time". Interestingly, they appeared to update this language during the interviews and there are examples within their conversations of children hearing a new conventional term (e.g. "ancestor", "dawn"), yet having the ability to apply it accurately shortly after in a different context. This mirrors the argument made at the infant level, that opportunities for children to improve their linguistic skills are valuable in improving their store of passive and active temporal language.

School A:

> I: But was he related to Maria?
> C: Yeah, her great, great Grandpa. It was her Grandpa's great, great Grandpa.

School B:

> I: So, according to the story that Grandpa told, how long ago did Grovesmed help the blacksmith?
> J: A few centuries.
> I: If you were to write it down, J, what would you write?
> J: Pause.
> I: You said "a few centuries". How many would that be?
> J: 5 or 6 hundred.

However, while Hoodless (2002) found that children's use of conventional temporal terms was unprompted by questions, this is not reflected in my study. As the data reveals, children were reticent and required prompts, though when they did use conventional temporal terms, they were not necessarily modelled on the vocabulary they encountered in the story.

Category C: The development of sequential understanding, temporal order and cognition of chronology

Reflecting the findings of Brown et al. (1976, section 2.6.2.2), the children in this Irish study demonstrated a strong ability to order and sequence events within a temporal context. Interestingly, their responses appeared to be influenced by the style of questioning of the interviewer. When asked to respond to "how long?" the children gave more simplistic two or three word answers. However, open-ended questioning appeared to generate more complex, involved reasoning and evidence of sequential cognition.

School A:

> C: Yesterday, when I came home from school I went down to my house and dropped off my school bag and I asked my father for money and then I went down to the pool hall and played pool and then we all got to go to soccer. When I came back up I looked at the clock. It was half 5 and soccer was still going on. I did my homework and went back out again with my friend and we went all around the place.

School B:
> C: I get my homework done first, then I get something to eat, then I play with my friends, then I get my dinner, then I have to go to band practice.
> J: I go to Soccer on Friday, soccer on Saturday and I play rugby on Sunday.

Typically, such responses reflected a train of thought and occasionally, one child developed on the sequence initiated by another, displaying evidence of the collaborative sequencing that was more prolific at the senior level below. Again, Sheldon's work (2010, section 2.2.2) is recalled here, pertaining to the value of questions in gaining insights and improving understanding.

School A:

> I: D, what time of the night do you think it is?
> D: 12 probably.
> I: Why would you say that?
> D: Because the moon is out.
> I: What do you think, C?
> C: I think it is just going on 10 o'clock.
> I: Why would you say that?
> C: Because it is not going on 12 o'clock because every time at 10 o'clock or 9 or 8 it goes that dark.
> D: It goes dark at 5 o'clock, probably half 4.
> C: It goes very, very dark.
> D: Yeah, because it is going up to Christmas.

School B:
> I: Could you tell me what time of night it is?
> J: Night, 8 o' clock.
> C: 5 o' clock.
> J: You keep saying 5 o' clock.
> I: Why would you say that?
> J: It might be dawn.
> C: Maybe it's close to dawn.

This evidence concurs with that presented by Hoodless (2002), who found that up to the age of 8-9, children's skill of using terms relating to temporal ordering and chronology varied greatly. By 9, the children were displaying more circumspect, thoughtful comments. With increasing maturity, children appeared to have developed greater skill in recounting

information in a chronologically accurate fashion, and they displayed a more advanced ability to include additional elements in their accounts of events.

When sequencing, there is evidence that children at this age level have progressed from merely providing a list of events in the story. Instead, they appear to provide a rational explanation for a happening and discuss probabilities and causation. This is characterised by such words as "maybe", "because", "yet", "probably". The process of collaboration appears to allow for experimentation, with the child checking out and questioning the validity of the other child's claim, leading to temporal updating. Theories emanating from Barton's cross-cultural study (2001, section 2.2.3) are recalled here, and reflected in the variations in children's understandings in the two different background experiences and contexts in which the children are living.

Category D: The cognition of temporal distance in the past and temporal location

Friedman's study (1991, section 2.6.2.3), provides insights into the reconstructive nature of how past events can be located in time by children. He concludes that 8 year olds have the specific, prerequisite temporal knowledge (days of the week, months, seasons) that younger children lack, and this enables them to understand temporal distance in the past and begin to locate events in time. De Groot-Reuvekamp et al.'s theory (2014, section 2.2.2) is also recalled here relating to the facilitation of children's wider understanding of the time context in which selected historical occurrences take place. Within both schools, the children in my study display significant variations in their ability to order events according to their temporal location in the story. While Child J appears to have a tendency to use non-specific temporal terms, Child C appears to engage in more specific temporal ordering:

School A:

> I: C, what time of the year did Maria visit Grandpa Groves?
> C: It was 1990.
> I: 1990, you think that is the date. Why would you say that, C?
> C: Because it was a long, long time ago.
> D: I don't think it was 1990, I think she saw him in 2000.

School B:

> I: How much time has gone by?
> J: Two weeks.

The subjective nature of children's reasoning is evident at this level. Friedman (1991) describes this as recalling associates of the event that have temporal value. Marshall's (1963, section 2.2.2) emphasis on the value of the local and familiar in enabling affective connections with the story of the past is also recalled here. There are many examples which reflect children's ability to associate personal events with occurrences in the story, as exemplified in these remarks of children D and C:

> I: D, how old do you think Grandpa was?
> D: In his 80's.
> I: Why would you say that?
> D: Because when you are in your 80's, you look old ... my aunt is home from America and she is in her 80's.
> C: I think he is 77 because that Grandpa is pure small and very, very old and if you looked at him you would think he is 77.

This data mirrors the work of Tartas (2001, section 2.6.2.3), whose research highlighted the progressive nature of children's use of temporal locations.

Category E: The relationship between autobiographical memory and temporal understanding

Nelson's research (2004, section 2.5.2.4), points to the emerging, developmental nature of autobiographical memory, which increases in both size and complexity over time. The data generated by this study reflects a strong tendency by children to subjectively relate their personal experiences to occurrences in the story, thereby drawing on their autobiographical

memory to make the required connections. Central to this, according to the theories of Rogers (1984) and Lee (1984) is the ability of the child to engage in backward referencing (section 2.2.3 above).

(Child D's (School A) comments below exemplify this.

> I: Grandpa said to Maria "the horse, you've seen him, the blacksmith, it's time."
> What did he mean by that, D?
> D: It's time ... if you are young and you have a teddy and you are getting old, it's time to throw it away, because you are growing up and you can't keep the teddy all your life because you would be too old and then if you tell people that you have a teddy, they will slag you as you are too old to have a teddy bear.

This example typifies Conway and Rubin's findings (1993, section 2.6.2.5) of the increasing ability of children at this age to connect specific past events with specific instances of the self. Yet, Hallden's caution (1994) relating to the "paradox of understanding history" (section 2.2.3) is also recalled here, as the child's comments may reflect a very narrow focus and understanding of the intentions and actions of others in the past, and too closely connected with the child's own personal experience.

Category F: The relationship between the development of temporal cognition and causal cognition

McCormack and Hoerl's study (2005, section 2.6.2.5), concluded that by aged 8, children have mastered the ability to use information about the order in which two events had happened to make an appropriate inference about a current state of the world. Such causal reasoning is reflected in the data from this age group, yet its emergence is evident only when prompted by me as interviewer. Some of the children's responses were intricate and detailed. They reasoned accurately and clearly in coming to conclusions. They appeared to quickly grasp the structure of the story.

School A:

> I: What time did Maria first hear the horse? What time of the night was it?
> C: 10 o'clock.
> I: Why would you say that?
> C: Because it was just going pure, pure dark and she heard a horse and she went down.

School B:

> I: So, what time of the year did Maria visit Grandpa Groves?
> C: Winter?
> J: Spring?
> I: Why would you say that?
> C: Because she was off on her holidays and she didn't have to go to school.

Hoodless (2002) found that by the age of 8-9, children used a wide range of vocabulary associated with reasoning and problem-solving: "I think", "might have", "maybe". This was not evident in the younger age-group's responses. She argues that it may be indicative of their sense that they are expressing their opinion, while also being aware that there may also be other valid opinions beyond their own. Likewise, the children in the Irish study qualified their responses with such terms as "might be", "maybe" and "if".

Category G: Understanding parallel time

Meek (1984) examined the complex nature of how children comprehend and relate to the notion of parallel time, where two unrelated events can be understood by the child to happen at the same time. In the junior infant data, an awareness of parallel time was evident in one response, and appeared to be associated with the child's developing sense of autobiographical memory. The third class responses provide evidence that this awareness has been refined, and the following examples reflect a more sophisticated understanding of parallel time:

School A:

> He's favouring one leg, I thought. That horse is lame.
> D: That's what I had to do. I hurt my leg at soccer and they put something on over my leg.

I: Well then, tell me why would you think that the horse would have had one weaker foot print?

C: Probably, he is weak because he hurt his knee or something.

School B:

I: When did her mum first hear the family legend of the Groves blacksmith, J?

J: When she was small.

I: Yes, but she said she wasn't really listening to it. Why?

J: Because she was more interested in her presents.

The data demonstrates a more advanced ability to use personal events in time to locate other events that were not personally experienced by the child. This exemplifies the emergence of a more refined distinction between what Dickinson and Lee (Chata project, 1984, section 2.2.5.4) term "everyday empathy", "restricted historical empathy" and "contextual historical empathy".

Category H: Awareness and use of anachronies in time

Hoodless (2002) claims that a well-developed chronological awareness is a prerequisite to the understanding of anachronies. This appears logical, given that the child is required to derive meaning from the story, while negotiating jumps forward and backwards, as well as omissions in the detail.

The data indicates that the children from school A appeared to use fewer anachronies in their responses than children from school B. There was little evidence of the use of analepsis, and no evidence of prolepsis or ellipsis with these respondents. Yet, both children from school B reflected an ability to use the full range of anachronies.

Analepsis:

I: When did her mum first hear the family legend of the Groves blacksmith, J?

J: When she was small.

Prolepsis:

> I: So what does "a safe passage to the next life" mean, C?
> C: He'd go on his horse. He'd be safe when he went up to Heaven.

Ellipsis:

> I: So, what's happening here in the story?
> C: He caught the Salmon of Knowledge.

Clearly, both of these children are able to move away from the chronological sequences of events as they are encountered in a different timeframe.

Category I: Ability to engage in temporal updating

Congruent with the research findings of Friedman (1978) and Weist et al. (1997), as outlined in section 2.6.2.5 above, my data reveals an ability by all four children to engage in this skill. The medium of collaborative sequencing appears to facilitate temporal updating. Child J (school A) did not seem to use the word "dawn" in earlier conversation, is doing so now, but is also qualifying it as a temporal measurement.

> I: Could you tell me what time of night it is?
> J: Night, 8 o' clock
> C: 5 o' clock.
> J: You keep saying 5 o' clock.
> I: Why would you say that?
> J: It might be dawn, maybe it's close to dawn.

Likewise, the word "ancestor" was new to child C in school B. Shortly after its introduction, she is applying it meaningfully in her conversation.

> I: What did she mean by that: "I felt the strength of the link with all my ancestors through this horse"? Who would your ancestors be?
> C: They were born before me.
> I: Can you name one person in your family who was born before you?
> C: My mam and dad. That was her ancestor's horse. He was called Groves.

6.1.3: The language elephant in the room – responses of Sixth Class children

Interview 5 tool place in school A with 2 sixth class children, both aged 11 years, one male (pseudonym 'Neil' - N) and one female (pseudonym 'Caroline' - C). The interviewer (I) was accompanied by an independent observer provided by the school (O). Interview 6 took place in school B with 2 sixth class children, both aged 11 years also, one male (pseudonym 'Ben' - B) and one female (pseudonym 'Ana' - A). The data reveals that children have increased awareness and cognition of all 9 categories of temporal understanding, but variations are evident in the degree to which children from school A and B reflect them in their conversations. This is resonant with the findings of Waldron's study of 10 year olds (2003, section 2.6.2.1), that the concept of time "dominated their definitions" (p. 78), with the majority making general references to time ('the past', 'years ago', 'long ago', etc.).

Category A: The production of temporal terms

Reflecting the findings of Tartas (2001) and Friedman (1986), section 2.6, significant inconsistencies are noted in the level of linguistic competence of the children in schools A and B, with participants demonstrating wide variation in the production of temporal terms. While both children in school A used a number of conventional temporal terms, they tended to be restricted in nature and devoid of any additional, qualifying information, with a predominance of limited answers: "sometimes", "the past", "young", "future", "the next day", "for the night". Children in school B utilised a more elaborate range of deictic terms: "a typical day", "for the winter", "we normally have …", "a good future", "in real life", "a normal lifestyle", "about that age", "further back", "back to when…", "sometimes", "coming up to", "his past and his present and future", "usually".

All the children in this cohort appeared to enjoy and understand the story, though they clearly were challenged by it. Throughout the narration, the children listened attentively, were engaged, enthusiastic and remained on task throughout. However, the two participants from school A displayed a reticence when engaging linguistically with the time-related aspects of the story, and it was somewhat difficult to elicit answers that referred specifically to time. Such reticence may be attributed to a disparity between the children's personal level of linguistic competence and that of the script, as attested in the restricted range of time-related vocabulary they utilised in their discussions. They appear to have a narrow repertoire of pertinent words and phrased in their active vocabulary. This clearly resonates with what Cregan (2008) identified as "a less frequent use of 'literate' style in children's patterns of oral language in disadvantaged schools" (p. 6). Thus, it was deemed necessary for me to interject in the narration of the story at regular intervals to provide explanations of certain terms and phrases to ease children's understanding. This is despite the fact that the text had been carefully chosen to reflect the level of linguistic competence of children at this age level.

Where direct references to time were made, the children in school A tended to demonstrate a literal understanding of the terms:

> I: She could read time. If you said to me "N, I can read time", what would you mean by that?
> N: If you said to me you can read time, I would mean like 1o'clock, 2 o'clock.
> I: Yes.
> N: Like that kinda way.

Later:

> I: What do you think a time print is, C?
> C: ... no response.
> I: what do you think a time print is N?
> N: I don't know.

Hoodless (2002) determined that children aged 8 and 9 were able to provide more elaborate descriptions of the experiences they remembered, using specific time descriptions. However, this is not evident in the case of the two respondents from school A, despite the fact that the participants are aged 11. There was little indication that the children were estimating or reasoning, and there was little evidence that they were using temporal terms with apparent ease, as expected, unlike their counterparts in school B:

School B:
> I: B, how long do you think he was actually in there?
> B: About 25 minutes, half an hour, maybe.
> A: And he probably thought it was longer.
> I: Why would you think that, A?
> A: Just 'cos he was looking at his past and his present and future and he probably thought it was like a long time and it was actually a short time.

The fact that two of the children's responses do not reflect this milestone has implications for children's learning and it points to the need for educational interventions that are required to compensate for this shortfall. Such implications will be addressed in chapter 7 of this work.

Category B: The production of conventional temporal terms

Hoodless (2002) determined that when children were given opportunities to reason, they were more likely to use of conventional temporal terms when children were reasoning. Friedman's theory (1989) in relation to older children's understanding of conventional temporal terms is also mirrored here, as outlined in section 2.6.2.1 above. This finding is reflected in my data, yet, again, there are discernible difference in the range and frequency of conventional terms used by the children in the two schools.

School A:

> I: How long do you think it would take him normally to get home from school?
> C: 10 minutes.
> I: Why would you say that?

C: 'Cos his mam wasn't worrying and it's probably a long way for him.

School B:

> I: A, what would you do on a typical day, now take yesterday or today, whichever you prefer.
> A: I get up around 8, go down and have my breakfast, get dressed, then we get into the car and we drive to school
> I: How long does that take you?
> A: 3 minutes

The data also reflects the assertion by Hoodless (2002) that as children mature, they improve in their ability to use conventional temporal terms. Interestingly, my data suggests that children in school A are more likely to use conventional temporal terms when prompted by the interviewer; children from school B used these terms spontaneously:

School A:

> I: So what could she see, what could she tell about him when looking at the ball?
> N: About when he was 2 and got sick all over his auntie and when he was 20 with his hands on his head.

School B:

> I: So, could you put an age on her?
> A: Maybe 72.
> I: B?
> B: 100.

This finding may suggest that while children in school A have a store of conventional temporal terms in their passive vocabulary, they would benefit from the provision of literacy interventions that would help improve their active vocabulary.

Category C: The development of sequential understanding, temporal order and cognition of chronology

All of the children in this cohort displayed a well-developed understanding of chronology and temporal ordering, as well as an ability to accurately sequence events recounted from the story. This reflects Case et al.'s theory (1986, section 2.6.2.2) that such cognition is

indicative of developmental changes in information-processing capacities.   The data suggests that children's ability to provide elaborate sequences improved dramatically over the younger age-group examined.   There was a marked increase in the number of elements in their response, though again, children from school B demonstrated an ability to extend and develop their ideas more thoroughly.

Despite the established differences in the linguistic capabilities of the children in the two schools, it is interesting to note that when recounting sequences, the children from school A provided far more detail in their responses than at any other time. Thus, while the norm for these children was to provide simplistic responses during the interview (78% of their responses had one or two elements only), this increased considerably when sequencing details from the story. In response to a particular question, both N and C provided 5 elements of response, while their counterparts in school B provided 17 elements of response each. The level of complexity may again be attributed to the perceived increased store of linguistic knowledge over their counterparts in school A.

In both pairs, there is evidence of a collaborative quality in the responses, as noted earlier in the third class data. Such collaborative effort reflects the ability of each individual child to listen, relate to the response of the other, then contribute to it, thereby sustaining the sequence.

> N: He probably stood up for himself and actually took action.
> C: Yeah, he was probably in a dream the whole time, trying to tell him what to do.

> I: What do you think B, did he actually stand up to them?
> B: Yeah, he knew what he would be like if he didn't change, so he wanted to make it better.
> A: It said that he did it in his dream, so he probably did it in real life as well because it stopped him from the bad dream.

Hoodless (2002) determined from examples in her own research that such ability to collaborate when recounting the sequence of the story "constitutes a considerable degree of ability in chronological sequencing" (p. 192).

Category D: The cognition of temporal distance in the past and temporal location

Friedman's study (1991, section 2.6.2.1) highlighted the processes that children and adults use to remember the time of past events, as well as their ability to judge the relative recency of past events. Children's responses in my study reflect this process, and they appear to be able to distinguish between subjective assessments of time duration and standardised forms of measurement. Congruent with Hoodless' findings (2002), the children indicated that time seems shorter if you are "daydreaming of Justin Bieber" (child C), but longer if you are "doing Irish" (Child N).   For child B, the trip to school takes "3 minutes. It's like 40 seconds and we are up".

Such a level of comprehension is to be expected, given that children, from the age of 7 approximately, would have been introduced to the notion of a standardised system for measuring time through the mathematics curriculum.   Thus, they would have a well-developed sense that individual experiences do not always conform to this system.

Category E: The relationship between autobiographical memory and temporal understanding

All children in this cohort displayed an ability to use autobiographical memory in their cognition of the temporal complexities of the story. Their comments reflect the key influence of the sociocultural milieu on the emergence of this aspect of temporality, as identified by Nelson (2004, section 2.6.2.4 above).

I: Do you know what a floppy disc is? It's like a memory stick for your computer.
N: Yeah, it's for the old computers. I was up in Kildare yesterday and seen all the old computers.

And, later,

B: It's horrible when you are on an airplane … (time) can drag itself out sometimes and then it can be really short like when you are in bed.
A: When you are having fun. I was at a party and it goes by really quickly, whereas if you were at something really sad or something it goes really slowly.
B: Like mass.

Drawing on autobiographical memory appears to provide a context for engagement with the new detail in the story, allowing a connection to be forged. Barton's (2001) theory is recalled here (section 2.2.3 above) relating to the value of family conversations in facilitating children's connections with the past and the children's comments reflect what Barton deemed the active interest children display in deepening and extending their knowledge about the past through questioning and discussion.

This finding has key implications for the manner in which new temporal learning might be approached, both at the level of curriculum and pedagogy. I will revert to this discussion in Chapter 7.

Category F: The relationship between the development of temporal cognition and causal cognition

All children demonstrated an advanced sense of causation, allowing them to reason between the occurrence in the story and what had influenced it. This is an interesting finding, given that developing the second-order concept of "Cause and Effect" (as delineated in section 2.2.5 above) is identified as one of the key skills in history by the revised Irish primary school curriculum (Figure 7), especially at the senior end of schooling. It reflects the

assertion by Weist (1989, section 2.6.2.5) that increased competence with temporal relational terms can be attributed to cognitive developments, as well as the ability of children at this age to utilise that Wertsch (1998) terms their 'cultural tools' (section 2.2.3 above)

A repertoire of vocabulary associated with reasoning and problem-solving is evident, and the repertoire outlined in the earlier age-group has been extended:

School A: "probably" (X5), "actually", "anymore".

School B: "usually", "maybe", "about", "sometimes", "whereas", "just", "actually".

In each instance, the terms appear to be used to express an opinion, yet there appears to be recognition that other opinions may also be valid. This reflects a more advanced sense of causation than that held by the third class cohort, as evidenced in some of the children's responses which were complex and detailed.

School A:
I: Why was she doing that to him? Was she being mean?
N: No, she was trying to be good to him, because she was trying to make sure to have a good life … help him out …tell him what he … are you going to do with his life?
I: So what were his choices?
N: Either stand up for yourself or be a chicken all your life.

School B:

I: Is it a positive or negative ending, A?
A: Positive, because it's saying that he has a good future and he stood up to the boys and his bad dreams are gone. And he is happy.

The children tended to make reasoned judgements, often explaining accurately and clearly, based on the available evidence.

Category G: Understanding parallel time

Congruent with the assertion of Fox (1993, section 2.6.1.6), all the children at this level

displayed an ability to comprehend the complex, challenging concept of parallel time. This is

reflected in their ability to recount events taking place inside the mysterious house and

acknowledge them as being "unreal", while emphatically asserting that the three boys are

waiting outside the house in "real" time.

School A:
> I: What do you think happened at the end?
> N: He probably stood up for himself and actually took action.
> C: Yeah, he was probably in a dream the whole time, trying to tell him what to do.

School B:
> I: Did he actually stand up to them?
> B: Yeah, because he knew what he would be like if he didn't change, so he wanted to make it better.
> A: It said that he did it in his dream so he probably did it in real life as well because it stopped him from the bad dream.

An understanding of parallel time appears to be a precursor to the development of a fuller

awareness of time-related anachronies, given that children require an ability to project to the

future, as well as understand the consequences of the action taken by the protagonist in the

story.

Category H: Awareness and use of anachronies in time.

Hoodless determined (2002, p. 195) that from the age of 7, children can distinguish between

personal experiences of time and how they can vary from one person to another, depending

on feelings associated with the experience. Thus, it could be reasonably expected that the

children's conversations at this age would reflect an ability to understand and manipulate the

complex nature of anachronies, reflecting analepsis, prolepsis and ellipsis. Compared with

their third class counterparts, children from both schools appeared to be very secure in their

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understanding of the complex time sequences that were involved. Two dimensions to such understanding were identified in the data presented: the children displayed an awareness of how these techniques were used in the story; they also used such complex techniques in their personal conversation.

Use of analepsis, school A:

> I: Why do you think she was looking into his past?
> N: Because say, if he was getting bullied or something, where it all started.

Use of analepsis, school B:

> I: Would it be an advantage to be able to see into the future?
> B: It would be annoying to you knowing what you were going to get (for Christmas).
> A: I would want to be there when it actually happened and would like to see it.

Use of prolepsis, school A:

> I: She showed him a time - what age was he?
> N: 20 and he stood up for himself and took action and then she stopped and told him that he can go now.

Use of prolepsis, school B:

> I: Would it be better or worse for his future?
> A: Better, because it would not be as sad, as he learnt what he had to do and she changed him by showing him what to do.

Use of ellipsis, school A:

> N: When he stood up for himself and actually took action … he probably stopped them ganging up on him.

Use of ellipsis, school B:

> A: It said that he did it in his dream, so he probably did it in real life as well because it stopped him from the bad dream.

These examples are reminiscent of what Rommetveit (1974) and Genette (1980) refer to as the older child's increased ability to coherently recount events of the past and to what Fox

(1993) identified as the role of narrative text in the facilitation of such cognition (section 2.6.1.6, literature review).

Category I: Ability to engage in temporal updating

The data reflects an ability by children to update their temporal understanding, based on new information and increased awareness. There was limited evidence of this within the third class responses, while at the junior infant level, there was evidence of children's ability to correct and update their use of terminology only (H: A hundred years; D: I'd say it was a hundred days, H).

The work of Friedman (1998, section 2.6.2.7 above) provides insights into the perceived ability of older children to temporally update their information. He attributes this developing skill to the utilisation by adolescents and adults of a wider range of image processes which provide them with a richer sense of locations in the past than the processes used by younger children. Thus, it is likely that this age cohort is beginning to utilise such processes of using their cognition of temporal location to help them update and modify the temporal understanding they have of events in the story.

School A:
    N: He is probably in 4th class and they are probably in 6th.

School B:
    I: How old do you think the woman is B?
    B: She could be really old. Because of her appearance and she is a time seeker, so she would be really old.

6.2: Identifying sociocultural facets of children's temporality

Mindful of Hirschfeld's (2002) assertion (section 2.4.1 above) that "culture saturates the environment" (p. 616) and Gelman's (1994) theories of cultural influence on "the cognitive architecture" (p. 621) of children, a range of sociocultural influences on children's understandings of time were identified in their conversations at all levels. These references were extrapolated and presented in Appendix 5 according to their specific age groups. The 6 themes that emerged (Figure 19, section 3.4.3) are now explored. The insights that the sociocultural theories of learning (section 2.4 above), in particular, have to offer are utilised to influence a re-conceptualisation of temporal ways of knowing and associated pedagogical approaches.

Kvale and Brinkmann (2009) caution against interview knowledge being presented in an "idealistic" manner and they point to the need to acknowledge the "situatedness of human experience in the social … and material world" (p. 294). A significant outcome of this analysis is the degree to which children's experiences of time within their world appear to influence their sense of temporality. In examining this, essentially, I am endeavouring to redress the imbalance identified by Hirschfeld (2002) as to the existence of an "impoverished view" (p. 618) of cultural learning that overestimates the roles that adults play, and underestimates the contribution that children make to cultural reproduction. The theories of Levstik and Barton (1996, section 2.2.3) are relevant here, as they examined the relevance of social context on children's historical thinking. Likewise the pertinent cross-cultural work of Barton (2001, section 2.2.3) is recalled for its emphasis on the important roles of the school, the family and the media in children's understanding and engagement with historical time.

Theme 1: The significance of family in children's interpretation of time

Reminiscent of Opie and Opie's (1960, section 2.4.1) earlier assertion that "children use the same moments of meaning as adults do as they create and inhabit their own cultural worlds" (p. 211), the data shows that even the very young children associate events in time with past personal experiences, and for all the children, such events appear to provide a pre-symbolic, affective anchor. Thus, birthdays, Christmas and Summer holidays feature in all children's conversations as emotional, empathetic experiences of time in the past. For example,

> H (aged 5): On my birthday, my fairy godmother forgot to come out to my party. So she came out to my Nana's and she gave me a monster book and she gave me a transformer lego.

The birthday may be a significant marker of past history and a key artefact associated with that time. The "fairy godmother" reference may be an association the child is making between her aunt and godmother and the familiar story character who transcends space and time, thereby resolving difficulties. At third and sixth class levels, such associations are also evident:

> C (aged 8): He is going home because it is probably cold and he probably wants to go back and eat something and drink some water and go back to his family.

Thus, home is significant as a place to return for security and comfort, and appears to be a constant in the child's life. The event of returning home appears to trigger an emotion for the child of an end to tiredness or weariness.

Family routine and a schedule of predictable events at weekends featured in children's conversations at sixth class level, while personal lifestyle and appearance are seen as determinants of how old a person may be:

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I: How old do you think the woman? B: 100? I was thinking that it's hard to tell because she doesn't have a normal lifestyle.

This reflects the affective "scaffolding" that children use to mediate sociocultural situations, referred to earlier by Wood (1999) and Pea (1993) in section 2.4.2 above.

Reminescent of Haenen and Schrijnemakers (2000) assertion (section 2.4.5 above) that children's cultural learning involves participating in a process of negotiation and co-construction of knowledge, the data reflects the significance of cultural ordering within the family, and family events, routines and schedules feature highly as time markers for the children at all three levels:

I: D (Junior Infant), what time of the day do you think it is?
D: … when the grownups leave their houses, it's 11 and 12.

Further, there is an awareness of their position within the family:

D (aged 5): My baby brother's name is Jake and he's only 1 and a half.

For C, aged 8, the child appears to have developed a sense of her place within the family, relative to an older generation:

I: Can you name one person in your family who was born before you?
C: My mam and dad … they are my ancestors too.

Likewise, the children in Interview 5 in sixth class appear to draw on their inter-generational experience to determine the relative age of the story character:

D: When you are in your 80's, you look old ... my aunt is home from America and she is in her 80's.
C: I think he is 77 because that Grandpa is pure small and very, very old and if you looked at him you would think he is 77.

Such learning reflects the appropriation theory (section 2.4.6 above) identified by Wertsch (1998) as the process of constructing knowledge from social and cultural sources, and integrating it into pre-existing schemas. It also reflects Cook et al.'s theory (2002) that

appropriation has occurred when the learner has adapted the information in a way that is meaningful to them and they can use the knowledge as their own. Ahonen's theory (2005, section 2.2.3) relating to the trans-generational nature of appropriating historical consciousness is reflected here, where "time is regarded not only as a technical measure but a substance loaded with human-given meanings and moral issues" (p. 699).

Theme 2: The significance of nature in children's interpretation of time

Interestingly, Hirschfeld's assertion (2002, section 2.4.1) that children do not merely "ape" an adult construction of culture, but learn to be cultural actors and adapt the majority adult culture to its own purposes, is evident in this data. Children at all three levels demonstrated an ability to reflect on past experiences of nature, synthesise them with events in the story or wider conversation, and draw conclusions based on the merged new and old learning. This is reminiscent of the theory of Grossman et al. (1999) regarding a co-construction and negotiation of meanings in a given cultural situation. Ultimately, within the process, the child grows out of dependency and constructs his own beliefs.

This was particularly relevant at infant level when children were citing examples of brightness and darkness in nature.

> H: He's scared of the dark. I'm scared as well.

This may indicate the significance of brightness and darkness in terms of how children interpret time, but it may also indicate an affective element in the child's personal association of the darkness with fear, and brightness with safety.

> D: It was dark only for 15 minutes and then the sun came out.

For both children in school A, aged 8, they could draw on their recent personal experiences of seeing horses near their homes when envisaging the size depicted in the story:

> I: What kind of horse was it? C: He is a medium. D: He is the size of a wild horse.

Child J (school B) made a number of references to "playing in the trees". It appears as if he distinguishes this from all other play time and structured activity as being actual "free" time. Likewise, Child C's first-hand experience allowed her to determine how old the hoof print is: "my granddad has a farm".

Significantly, only one limited references to nature as a marker of how children spend time was identified in the story at 6th class level by the children in school B. This is likely to be attributed to the dearth of references to nature in the story, but surprising as both children established that they live in the country and attend a rural school. For both children in school A, nature was a significant time-marker; both children established that they live very close to the school in a high-density housing development, with very limited open space in the vicinity.

Theme 3: The significance of school in children's interpretation of time

Zerubavel's theories (1981) relating to temporal regularity and the sociology of time are recalled here, where order is seen as "a sorting of priorities" (p. 5). In this study, the school's structure, routine and timetable appear to have a most influential role in framing children's cognition of time, and it features in the children's conversations at all levels. This is congruent with Nelson's assertion (2004, section 2.5.2.4) above regarding the key influence of the sociocultural milieu on autobiographical memory. It also echoes Harris' view (1998) that "…a child's culture is loosely based on the majority adult culture within which it exists"

(p. 198). Mason's contention (2001) regarding the prominent role of the teacher and school in this learning process is strongly borne out in the study.

This is evidenced in the start of the school day being associated with a particular habitual activity of letter identification/formation.

> D: I don't like school, because I know they start with the letters.

The child appears to associate a significant event in the school with the time of week, and it appears to allow a rudimentary time positioning to be established:

> D: The big huge Friday, we are having a show.

The number chart in the room appears to be significant in allowing the children to make a connection with the language of time, and a basic understanding of clock time is emerging, probably aided by school-based work, given their repeated references throughout the interview to the number chart on the wall.

> D: Because it was 2 to 4. The small hand is on 2 and the big hand moved all the way up to 4. There was 6 o' clock, it will be 1, 2, 6 (pointing to numbers on the chart in the room).

> I: What time is small break? H: After the prayer at 1 o'clock.

Interestingly, at third class level, the influence of the school in shaping children's free time after school was significant:

> C: I get my homework done first, then I get something to eat, then I play with my friends, then I get my dinner, then I have to go to band practice.

At sixth class level, references abound to the influence of the school in inculcating children into a linear concept of time, as reflected in their references to school routines and events that

occur at predictable times in their school day. After school activities that are arranged by the school also appear to contribute to this. :

> A: And then we come in and we normally have maths and stuff first. And at 20 to 1, we have break or small lunch and then we come back in and do some more work and it would be 10 past 12, so we go out for big break. And on Tuesdays and Thursday, the girls go to the field and on Mondays, Wednesdays and Fridays we stay down in the yard and so, today I am going up to the field at big break. And then we might come in and do our play again after lunch and we might do art or something and we go home at 3. I go home and have my dinner and homework and then do anything after that.

Such examples are reminiscent of the distinction drawn by Vgotsky between "everyday concepts" and "academic concepts" (section 2.4.5 above) and also reflect Joyce and associates' argument (2000) that the school stimulates the learner to connect their knowledge, partly acquired beyond the classroom, partly acquired formally in school.

Theme 4: The significance of the immediate social environment on children's interpretation of time

As outlined by Hoodless (2002), children's wider cultural experiences in the form of travel, the media and information and communication technology feature as being significant influences on children's temporal cognition. The influence of recreational resources on children's personal experience of time featured at all three levels:

> H (aged 5): I wake up and I go downstairs and turn on the TV and turn 666 on and press the second button and press the backwards arrow and turn on 606.

A routine of watching television before school appears to be an established time marker for child D, aged 8, while the use of electronic resources feature as a marker of how the four children at this age level spend their free time:

> C: I have a lot of free time. I just spend most of it upstairs in my room listening to music.

A similar pattern of television viewing was observed at sixth class level in school A, though such references were absent from children's conversations in school B:

> D: I get up at 6 o'clock. Because I watch telly.

The influence of travel on children's sense of time and space was evident. For child N, School A, this manifested itself in his depiction of a floppy disk and desktop computers as historical artefacts in a school he recently visited, in contrast with his own school's use of modern laptop computers. Likewise, child B in school B experienced time as moving very slowly when he was flying: "It's horrible when you are on an airplane".

Theme 5: Other resources

Levstik (1986) points to the importance of students experiencing a wider variety of resources other than mere textbooks in accessing historical information. References to the range of other resources that featured in children's conversations about time will be delineated in section 6.3 hereunder.

Theme 6: Emotions triggered by various times

Examples abound of positive and negative emotions being activated by specific occurrences in the story. Thus, for example, a reference to Winter is associated with a child's personal experience of Santa coming:

> I: How long do you think they were asleep? D: For hundreds of times … Santa disappeared his sleigh and throwed presents down the chimney.

The emotions of security and fear are triggered by the children's reactions to the dark:

M: I love being tucked up in bed.

M: When he turns off the light, it gets dark and he gets scared.

Not surprisingly, given the timing of the interviews, Christmas was mentioned, not as a time event in its own right, but in association with a fun experience of playing in the snow.

I: When does Christmas come? T: When it snows and we want to throw snowballs.

For child D (aged 8), a strong emotion of parting with a special toy appears to have been triggered by the words "It's time":

D: It's time ... if you are young and you have a teddy and you are getting old, it's time to throw it away, because you are growing up and you can't keep the teddy all your life because you would be too old, and then if you tell people that you have a teddy, they will slag you as you are too old to have a teddy bear.

For child A in sixth class, there was a clear association of a time event with fear:

B: You can get nervous, get anxious yourself, get uncomfortable.
I: Can you think of an example of when you might feel that way?
A: The dentist.

For children C and N, the association was with boredom, daydreaming and school subjects:

C: Sometimes I would be just thinking of Justin Bieber!
N: Like when she (the class teacher) is doing Irish.

Such data highlights the subjective nature of how human time is experienced by children and the work of Wilschut (2010), as recounted in section 1.4.2 above, is recalled here. He refuted the notion that clock time could accurately represent how time is actually experienced by a child, given its linear, one-dimensional nature. Instead, he strongly argued for recognition of the variable nature of how a child experiences time.

This data is also reminiscent of the seminal cyclical conception of time argued by Friedman (1993, section 1.4.2 above), as it points to the natural cognitive accommodation by the child of familiar, recurring events in their lives.   Thus, as borne out in my study, the experience of engaging in routine, habitual activities, both at school, at home and in their wider social and cultural worlds, facilitates children's meaningful cognition of time.   Friedman's theory (1993) also posits that such personally-experienced patterns have much benefit for memory and recall of events through the establishment of "islands of time", equipping the child with practical, cyclic information that is needed on a periodic basis.   Povinelli et al.'s theory (1996, section 2.5.2.3) relating to a sense of cognition of temporal distance in the past and temporal location is also pertinent here, as it asserts that such learning is facilitated by children's engagement in activities that offer a habitual routine, such as, playing a certain sport at a given time each week, or going on a holiday at a particular time each summer. Given the data emanating from my study with children, such theories are plausible in their accurate reflection of the manner in which children naturally experience and think about time in their daily lives.

Such theories are further illuminated in the interviews by additional data emanating from an examination of the children's personal experiences of how they spend time outside of the formal school setting.

6.3: Children's personal experiences of time

6.3.1: Junior infant children's personal experiences of time

Children in junior infants from school A made repeated references to their time outside of the scheduled school time as being spent on free play.   This consisted of playing with dolls,

playing in the rain, playing "hide-and-go-seek" and playing soccer, as cited. Both respondents repeatedly made reference to watching cartoons and other TV programmes, before and after school. This featured highly in their conversations about their experience of how they spent their time outside of school. Neither respondent referred to any such structured activity provided either by parents or the school.

This contrasted with the responses from children in school B at this level. Both respondents cited involvement in extra-curricular activities that would have been arranged by both parents and the school. These included playing football and rugby for identified clubs, going to ballet classes, going fishing and doing artwork in a structured setting. Both respondents also spoke of the school's organisation of a concert involving all children. Outside of this, they cited 2 unscheduled activities: playing a DS and watching TV.

6.3.2: Third class children's personal experiences of time

Both children in school A appeared to have little structured activity outside of the school time. For child C, this was reflected in her comment "When I went home from school, I went back out again with my friend and we went all around the place". She enjoyed "going fishing … all over the place", soccer and going to the pool hall. Child D liked to watch television (stating that he got up at 6.00 a.m. on a school morning to watch it), play X-box, go fishing on Summer holidays with his father, and play soccer. Interestingly, neither child in this cohort cited evidence of being influenced or supported by the school or community in their experience of how they use time outside of school. This contrasts with the experiences cited by the sixth class cohort from the same school below.

Both children in school B described themselves as having enough free time outside of structured school time:

> I: Are you a busy person?
> C: I have a lot of free time. I just spend most of it upstairs in my room listening to music.

Yet, they both were involved in a number of structured extra-curricular activities. For child J, this involved soccer (two nights a week), hurling and club rugby. He liked to play with his friends "in the trees". For child C, she liked to play with her friends, but did not specify detail. She was committed to band practice 3 times per week, and acting class on Saturday.

6.3.3: Sixth class children's personal experiences of time

Both respondents from school A spoke of spending time playing with their friends in what appears to be an unplanned, unstructured manner:

> C: I meet with my friends.

> N: I went home and I didn't have all my homework done, so I finished it off and then went out with my friends.
> I: How long were you out playing?
> N: About an hour and a half.

Both the school and the community appears to provide a range of extra-curricular activities; these include a homework club, scheduled directly after school, to assist children in completing homework, and a range of clubs in the local community centre, including a dance club and a soccer club, as cited. This finding corroborates the temporal discourse identified in the study *How are our Kids,* as outlined in section 2.4.8.3 above, which was conducted in the same regeneration area where School A is located in the city.

Further, child N referred to his intention to attend a renowned fee-paying boarding school in the coming school year. It is understood that this plan is encouraged and facilitated by the school and the parish community, who hope to provide his family with a scholarship to fund the initiative. Child N is also actively supported by the school to attend what he referred to as "a programme" designed for children with special academic ability and talents. In all such instances cited during the interview, it is noted that the school appears to have a central role in providing children with the impetus to engage in such extra-curricular activities.

Their counterparts in school B described themselves as engaging in a variety of sporting and cultural activities outside of school, while the school also appears to complement this range of extra-curricular activities with the provision of a school play and competitive sports events with other schools.

      A: "I do lots"; B: "I have a busy sports life".

Reflecting the findings of the *Growing Up in Ireland* (2009) survey, cited in section 2.4.8.2 above, these children appear to fall into the category of the busy lives group (15%) , who are involved in a wide range of activities, spending some time on ICT, reading, cultural activities, sports and video games.

Each child engaged in a variety of planned activities: guitar, soccer, swimming, horse riding and hurling. They both appear to have access to a wider range of electronic devices in their homes: laptop, I-Pad, I-Pod Touch and X-box. Their potential use as educational resources is evident, whereas children in school A made reference only to using gaming devises in their homes. Likewise, while children in school A cited watching TV as a common occurrence before and after school, children in school B indicated that such activities were confined to evening time only.

Thus, a highly-structured pattern of time usage by children was evident in the study, though significant variations exist between the two schools in the nature and levels of cultural, sporting and social interventions children experience outside of formal school time, through the extra-curricular activities arranged by the schools and families. This claim corroborates the theory of Lareau (2003, section 2.4.7 above) that middle-class parents were heavily involved with their children's free time and were responsible for the intensive scheduling of activities, in contrast to their working class counterparts who appear to experience "an accomplishment of natural growth" (p. 88). The claim is reminiscent of the theories of Bourdieu (1986, section 2.4.7 above) regarding the type of cultural capital inherited from the family milieu. Such "cultural advantage" (Lamont, 2000) can be viewed as reflecting what Giddens (1991) refers to as the intensification and individualisation of everyday life (section 2.4.8.1 above).

6.4: Conclusion

The claims emanating from my study with children, as well as the three earlier Irish studies examined above (section 2.4.8), provide an interesting basis from which to probe the causal link between the personal, yet varied experiences children have of time, and how it can influence their temporal cognition. The principle of the embeddedness of such learning in the life world of the child is central to this argument, as delineated in figure 11 above. The analysed data also provides key insights into children's individual level of temporal cognition and points to the interventions that would be required to augment existing learning, especially in the area of linguistic competence.

Congruent with Barton's (2001) and Wertsch's (1998) theories, the influence of cultural mediation on children's cognition of time has been firmly established throughout this strand of the research, and many of the distinctions between the cognitive construction of time in the adult mind and the child's mind, as established through the literature (section 2.3 above), are borne out in the study. Yet undoubtedly, as exemplified in the data, from a very young age, children are apprenticed into a highly-structured adult construction of time, where clock time is decidedly dominant, and a key determinant of how time is lived and experienced. Children's school lives are also heavily influenced by such scheduling, with school bells and timetables determining the exact time and duration of their work and playtime. The rationale for such structure is clear: the national curriculum demands it; social order is facilitated by it. Reflecting the overarching principle of power and policy in my study (figure 11), there is a strong element of adult influence and power involved.

Overall, these claims point to a re-theorisation and re-conceptualisation of approaches to temporality specifically, and historical understanding generally, to be explored in Chapter 7 below.

Chapter 7:

Conclusions - Temporal understanding: an unnatural way of knowing?

7.1: Introduction

> We begin with questions, problems, frameworks, but mostly we begin with a setting where we hope we might find answers to some of our questions and discover answers to questions we had not thought to ask. We are like detectives pursuing clues to a mystery, piecing together a puzzle, not knowing what the jigsaw will reveal.
>
> Malone (2003).

My journey with this study began long before the official commencement date in 2010. In truth, it germinated from a very humble beginning in a seemingly random, though staggeringly powerful question my five year old son, Robbie, asked me many years earlier from his car seat as we drove along: "Mom, what did I look like before, when I was in Heaven"? To this day, I am struck by the profound nature of that question, and by the highly complex range of meanings that I could still take form it. I could not answer it adequately then, and I dare not answer it now, as it is likely that the most extensive theorising that I could undertake would not fully explain the thinking of a small child about his existence at that point in time, how it relates to an existence in a past time, and crucially, the time period involved in the word "before". Intriguing as it is, the question is reminiscent of the theory of Wineburg (2001, section 2.2.4), that historical thinking is an 'unnatural act', yet in itself is not a-typical of the myriad comments and utterances of children that I have collected in the intervening years about the topic. I am left with a sense of how interesting and compelling children's ideas are about time and its place in their day-to-day lives.

However, being the child of a teacher-educator in the area of primary history, it is hardly surprising that I could not let this comment from my son go. Reflecting the principle of the embeddedness of my study in my personal and professional experiences (figure 11), as a researcher, I have journeyed over the past four years to come to terms with temporal ways of knowing, seeking insights in the literature, the curriculum and in pedagogy. My work led me

to consider particular routes of discovery in building an understanding of how children can develop a deeper sense of time, allowing more meaningful connections with the story of the past; accordingly, I chose three different avenues from which to explore children's temporal ways of knowing. Thus, history textbooks, the quintessential mediators of the curriculum (Stray, 1994; Valverde et al., 2002), became an initial starting point; student teachers' apprenticeship into the prevailing culture for teaching history generally, and temporality specifically, was a second milestone of discovery, while children's voices simply had to be heard. This is how the school-based qualitative interviews with children evolved.

This study has been a very enriching experience for me, providing many answers, insights and understandings that I have documented, in an endeavour to examine and contribute to the extant literature and scholarly debate in the area. Yet, while the topic is of particular personal interest, it also has important educational significance, primarily in examining the relationship of temporality to first-order and other second-order concepts in forming a deeper sense of historical understanding. This final chapter outlines the claims that emanate from my work, some of which reflect the findings of a number of key researchers, others which challenge and elaborate on aspects of their findings. The study examines whether under elaborated, developmentalist views of temporal cognition are reflected at the levels of pedagogy and curriculum. The study's findings are of potential relevance at both a national and international level, and can contribute to a re-theorisation of how temporal ways of knowing can be approached, leading to a deep and flexible historical understanding (Bransford et al., 2000).

This chapter also acknowledges the study's limitations and explores possibilities for future research relating to the topic. It concludes that a cognitive-developmental perspective has

dominated, and due recognition has not been afforded to the sociocultural influences on children's temporal ways of knowing.

7.2: Addressing the study's research questions

In addressing how children 'understand backwards in time', it is fully acknowledged that deep and flexible historical understanding is much broader than temporality, yet inseparable from it. The study establishes that temporality really matters in strengthening historical understanding, as one of a broad number of second-order concepts. Three research questions were established from the outset:

1. What opportunities are available for children to develop temporal ways of knowing?

2. How do student teachers experience being apprenticed into the available culture for teaching history and understanding temporality at primary level?

3. What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding the dynamics of children's temporal ways of knowing?

A number of claims have been established, emanating from the critique of literature undertaken in chapter 2, as well as an analysis of data pertaining to the three research strands. In particular, my research drew on the work of Barton (2004, 2011), Hoodless (2002), Friedman (1993), Hirschfeld (2002), Wineburg (2001), Hodkinson (2003), Haydn (2010), Rogers (1979), Lee (1984, 2010), among others, whose noteworthy contributions to scholarly debate in this area are duly recognised. Collectively, these claims articulate what Nokes (2012) describes as a theoretical and pedagogical framework for a re-conceptualisation of

approaches to temporality specifically, and historical understanding generally. Significantly, I argue, my work can contribute to a field of research that has been neglected in research on teaching, given Wineburg's, still relevant, observation that "…history has been virtually ignored by researchers interested in cognition and instruction" (p. 73, 1991).

7.2.1: What opportunities are available for children to develop temporal ways of knowing?

In addressing research question 1, my study establishes the complex, multi-faceted nature of ==temporality and it highlights the criticality of temporal cognition as a prerequisite second-order concept in the development of deep and flexible historical understanding==. Convergent with the English study conducted by Hoodless (2002), my research concludes that children of primary school age are capable of embracing a diverse range of aspects of temporal cognition, given a supportive learning environment. In particular, both studies clearly elucidate the developmental nature of such cognition, mirroring what Hodkinson (1995) identified as the maturational forces that apply in the acquisition of time concepts.

My study demonstrates that the history curriculum has an inexorable role in this process, yet the extant primary history curriculum in Ireland, as established in section 2.2 above, adopts an under elaborated approach, with greater recognition given to the cognitive-developmental view of temporal cognition. Thus, while temporal cognition is situated in connection with other mutually reinforcing second-order concepts, I conclude that there are missed opportunities for recognising and attending to the complex, developmental nature of such work. This is evidenced in the equivocal arguments presented in section 2.5 above, which poorly facilitate this intricate process for both teachers and textbook authors. Moreover, it

neglects to recognise what Booth (1993) described as the "invariant hierarchy" in the approach required when teaching for temporality. Such under elaboration is also reminiscent of the seminal research of Hodkinson (2003) into the history curriculum in England, as examined in section 2.5 above, in which he deduced that the "aspects of the development of temporal concepts is vague and confused with some statements of age-related learning appearing wholly unrealistic" (p. 29).

The neglect and marginalisation of temporality (orienting principle 1, figure 11) is again evident in the claims emanating from a content analysis of textbooks that was undertaken in the study (chapter 4). While these resources are identified as the quintessential arbitrators of the curriculum (section 3.2 above), my study found that the majority poorly observe its constructivist guiding principles, and poorly mediate curriculum policy. They reflect what Valverde et al. (2002, section 2.2.11) term 'poor exemplars' of the vision of translating curriculum policy into practice. Yet, reminiscent of the power and politics principle permeating my research (figure 11), it is eminently clear from this analysis that the textbook authors establish themselves as arbiters of the curriculum. Porter et al.'s theories (2011) are recalled here (figure 8, section 2.5.6) regarding discordances between the intended, enacted and assessed curricula in history, as my study demonstrates that, despite assertions to the contrary, most textbooks afford temporality a low status and provide inadequate support for developing temporal ways of knowing, with some notable exceptions. Overall, the combined texts at the three levels examined, were deemed to have a strong predominance (75%) of activities which had poor provision for temporality.

There is what Vernon-Feagans et al. (2002) characterise as a "poor fit" between the textbooks and the cultural knowledge of the children, and between what textbook authors aspire to do,

and what they actually provide by way of temporal learning experiences. The poor fit has clear implications for equity, as children of different cultural backgrounds will experience the textbooks differently. Yet, this limitation of low compliance with required curriculum standards goes unchallenged by the authorities who formulate and implement it, resulting in significant divergences in the pedagogical approaches adopted by textbook authors. This approach is at variance with the recommendations of Cole (1998) and Strahan and Herlihy (1995), as outlined in section 3.2.1 of this study, and is manifested in the inconsistencies in the level of cognitive complexity provided from one level to another, between the five series of texts examined.

These claims are of concern, given Looney's (2003, section 2.5.4) assertion that textbooks are more influential than the curriculum in making decisions about classroom teaching. It underscores Cohen's theory (1990, section 2.2.7) that while teachers may understand what is intended, and believe they are teaching it, in fact, they may not be doing so.

Arising from these claims, my study establishes the fundamental need for a convincing, well-defined curriculum framework for developing temporal cognition, reflecting the theory of Krippendorff (1980, section 3.2.1 above) that a basic prerequisite in successfully undertaking a programme of learning is the need to highlight its relevant "... direction, focus, organization and priorities" (p. 438). While it can be argued that the history curriculum provides teachers with adequate direction in the form of a comprehensive, graded menu of content at all levels, nonetheless, it has been clearly established that an under elaborated approach to temporal cognition is adopted. My study argues that this has implications for the guidance of resource providers in history. Inevitably, I argue, it has contributed to the temporal deficit in textbooks, as highlighted.

In my appraisal of the opportunities that are available for children to develop temporal ways of knowing, I conclude that the Irish history curriculum is in need of review, given the shortcomings that prevail, especially in the absence of any meaningful evaluation of its implementation phase. This is in contrast to evaluations that have been undertaken of other aspects of the SESE curriculum, such as science (Varley, Murphy, & Veale, 2008a, 2008b). The compromised place of history in the current knowledge hierarchy, as examined in section 2.2.12 above, provides a context for understanding this lack of evaluation. Wineburg's stark assertion (2001) that "history's status is anything but secure" (p. 5) is recalled here; notwithstanding this, my study contends that a robust appraisal is long overdue in providing data relating to the following facets of classroom practice, apart from the provision for temporality:

1.   teachers' day-to-day experiences of the challenges and successes they encounter in implementing the revised history curriculum, in a diverse range of schools across the country, especially at infant level;

2.   the degree to which the principles of the curriculum are reflected in teachers' everyday practices in history;

3.   the extent to which the key skills in history are being developed at each of the four levels (teachers are not required to account for skill promotion in the schemes of work or monthly accounts they prepare for the DES Inspectorate);

4.   the nature and use of history resources by teachers, including textbooks, workbooks and ICT, and teachers' perceived skill in utilising these judiciously;

5.   the provision for assessment and evaluation of children's learning in history.

In the absence of standardised testing, teachers require specific guidance on assessment approaches to be adopted; such recommendations, as set out in the curriculum, are unclear

and non-specific. It supports an approach that utilises techniques such as teacher-observation of children, teacher designed tasks and tests, observation of pupils' work samples, portfolios and projects, and the compilation of curriculum profiles. I contend that none of these broad techniques could adequately assess the breadth of precise skills and inherent challenges involved in developing historical understanding, and specifically temporality, as highlighted by Wineburg (2001) in this study. Congruent with Anderson's assertion (2000), some of the skills may be observed at a cursory level by teachers in everyday classroom interactions, yet it is unlikely that the intricate higher-order skills can be adequately evaluated or accounted for, given the proposed curriculum approach. Such a discrepancy inevitably contributes to an undue emphasis on summative, content-based assessment by textbook authors and publishers, as established in section 4.1 of this study.

7.2.2: How do student teachers experience being apprenticed into the available culture for teaching history and understanding temporality at primary level?

In addressing research question 2, my study focused on the experiences of novice teachers as they are apprenticed into the school culture and norms for teaching history, especially in their use of textbooks and workbooks as resources. The literature on history education, as charted in sections 2.2.2 to 2.2.5 above, highlights the wider questions of the environment within which temporal cognition and fellow concepts are taught. It examines sociocultural claims about learning that are already accommodated in the more recent research into historical understanding. These include the differences in children's lives, the mediating power of the various tools used to teach for such understanding (such as language, textbooks, stories), as well as power and implementation issues. This study provides additional insights into the school culture for teaching history.

My study is mindful that within a student placement environment, examination conditions prevail, with a highly intensive adherence to constructivist principles. This emanates from the strong support for such principles that is offered in ITE programmes. Yet, such support may not readily be available to practicing teachers, and may not be reflected in their day to day practice. The claims emanating from my research corroborate the theories of Guyver and Nichol (2004, section 5.7 above), who identified such placement experiences as being influential in student teachers' emerging identities as teachers of history. The data also points to the potential influence of progressive, experienced teachers in changing classroom culture, as they work side by side with student teachers. The data relating to the low use of textbooks refutes anecdotal evidence of their prolific use, though comparable data is not available relating to experienced teachers' actual practice to facilitate such an analysis. This contrasts sharply with Motherway's earlier research (1986, section 2.5.1 above) into the use of history textbooks in the Irish primary school context, which concluded that "the textbook continues to dominate classroom life" (p. 44) and "… the history textbook is more than a teaching aid; rather it constitutes the history curriculum" (p. 195).

This study establishes that student teachers adopt a judicious approach to the use of history textbooks and workbooks while they are on school placement. They are astute in their use of resources generally, are adept at determining the degree to which they facilitate learning that reflects the principles of the history curriculum, and they possess a high level of confidence in utilising a wide range of resources that meet their placement requirements. While a considerable proportion of students reported that textbooks were in use in their placement classrooms, they placed very little emphasis on them. Generally, students used them if they were deemed to be fit for purpose, and they demonstrated skill and insight in determining criteria for their selection or rejection. The most important criterion was their sense of how

the textbook reflected the guiding principles of the curriculum. The study concludes that while student teachers are immersed in the available culture for teaching history during their school placements, they are not influenced by it to any great extent in relation to the methodological approaches they choose to use.

My study demonstrates that respondents were confident in their approach to history teaching generally, and this corroborates the recent research of Irish teacher educators (IASSEE, 2009, section 5.7 above) that student teachers became more positive about the teaching of history as they progress through their ITE. While respondents to my survey cite a lack of content knowledge as being a concern, they indicate that the personal research they undertake can counteract such a shortfall. The study attributes their concern over content knowledge, in part, to the low uptake of history as a subject by respondents as they progress through levels of schooling. Despite the perceived content shortfall, over two thirds of undergraduate students (68%) and three quarters of postgraduate students (75%) felt comfortable teaching history at this point in their careers. Reflecting the findings of Shulman (1986, section 5.5 above), students' increased knowledge, acquired as a result of their ITE programmes of study, was deemed to have been a factor in their perceived comfort in teaching the subject. The study also demonstrated that over three-quarters of respondents were favourably disposed towards history, citing high levels of enjoyment with the subject during their primary school experience (75% undergraduate, 80% postgraduate). These figures are higher than comparable statistics cited in the IASSEE survey (2009), as outlined above. This bodes well for addressing approaches to temporal ways of knowing within ITE programmes, given students' positive disposition toward the subject, as well as the necessity for them to fulfil course requirements.

7.2.3: What insights do the cognitive-developmental and sociocultural perspectives on learning provide for understanding the dynamics of children's temporal ways of knowing?

Wineburg (2001), a cognitive psychologist and arguably one of the most influential thinkers and researchers on historical understanding, studied what is intrinsic to historical thinking and his significant insights are examined in detail in section 2.2.4 above. His work explores and advocates approaches to the engagement of children in the 'unnatural act' (p.488) of historical thinking that allow for a navigating of the tension between "the familiar and the strange" (p. 3), where opportunities are provided for the child to examine history topics that "… jar with their strangeness" (p. 3). He emphasises the need to facilitate the creation of an appropriate context for the past, and he cautions against the learner borrowing a context from their contemporary social world to understand the story of the past. Yet, interestingly, Wineburg (2001, 2005) does not mention or explore the role and importance of temporal ways of knowing directly in his writings, though he readily acknowledges the sociocultural impacts on historical thinking.

It has been clearly established that children's emerging temporality at the primary school level is a highly complex, developmental process, influenced by a broad range of cognitive-developmental and sociocultural factors. The dominance of the former in the literature is undeniable, as the literature review attests. My study is offering a more deeply cultural view, where due cognisance is taken of the socio constructivist influences on children's learning, and it sets out an instructive, coherent framework for the attainment by children of a sense of deeper time, incorporating both the cognitive-developmental (Figure 18, section 3.4.3 above) and sociocultural influences (Figure 19, section 3.4.3 above) on this cognition.

Emanating from, but building on, Friedman's (1986) and Tartas' (2001) 7 categorisations, as outlined in section 2.5.1, I am presenting a more nuanced range of cognitive-developmental influences that emerged from the school-based qualitative study with children. In doing so, I am expanding the earlier categorisations of these writers to 9, giving greater credence to the influence of both non-conventional temporal terms, as well as parallel time, and thereby providing a more expansive understanding of temporal ways of knowing.

Category A: The emerging nature of the production of non-conventional temporal terms;

Category B: The production of conventional temporal terms;

Category C: The development of sequential understanding, temporal order and cognition of chronology;

Category D: The cognition of temporal distance in the past and temporal location;

Category E: The relationship between autobiographical memory and temporal understanding;

Category F: The relationship between the development of temporal cognition and causal cognition;

Category G: Understanding parallel time;

Category H: Awareness and use of anachronies in time;

Category I: Ability to engage in temporal updating.

The study also presents a range of significant sociocultural influences on children's temporal knowledge that emerged from the school-based interviews, reflecting what Kvale and Brinkmann (2009, p. 294) term children's "constructions of the world": family; nature, school, the immediate social environment of the child, other resources (such as games, computers, their travel experiences etc.), as well as emotions evoked by various times that were discussed. Yet, the under elaborated approach is again reflected in the poor recognition afforded by the curriculum to these social and cultural influences on children's emerging temporality, as established in the literature. Reflecting the seminal work of Vygotsky (1987),

Hirschfeld (2002), Cole (1996), Gelman (1994), Harris (1998), Barton (2001), VanSledright (1997) and Sfard (1998), among others cited, children's sociocultural interactions are of key importance in shaping their sense of their world. Hirschfeld's assertion that culture "… virtually saturates the environment" (p. 616) implies that it inevitably influences temporal understanding, and that the embeddedness of such learning in the life world of the child must be given due recognition (orienting principle 3 of my research, figure 11).

This "impoverished view" (p. 618) of cultural learning, as established by Hirschfeld (2002), has been visibly highlighted throughout my study, and it is argued that the roles that adults play in cultural reproduction are overestimated, while the contribution that children make is underestimated. This pervasive adult construction of knowledge is reflected in the politics and power of the curriculum (orienting principle 1, figure 11) and is reminiscent of Goodson's theories relating to knowledge hierarchies, as explored in (section 2.2.12) above.

These insights allow a framework to emerge which guides an alternative policy approach to the development of more elaborated temporal ways of knowing, leading to deeper historical understanding. They also facilitate a better informed curriculum approach and potentially have application at an international level, where similar issues of under elaboration are evident in the individual history curricula in England, Northern Ireland, Scotland and Wales.

7.3: Conceptual and professional significance of this study

My study contributes to the conceptual and professional research base in relation to temporal ways of knowing, at a number of different levels. While the study began with a curriculum focus, many of the findings have relevance beyond it, at a national and international level. Specifically, the study makes a number of claims and contributions:

1. Historical understanding: that deep and flexible historical understanding is much broader than temporality, yet inseparable from it;

2. Curriculum: there is a fundamental need for an elaborated well-defined curriculum framework for developing temporal cognition, to reflect the multi-faceted, constructive, complex nature of learning and the concomitant challenge for policy, classroom practice and the professional development of teachers;

3. Curriculum framing of temporal ways of knowing: that curriculum and pedagogy in primary history is based on an under-elaborated and developmentalist assumptions/bias, in tandem with insufficient recognition afforded to the sociocultural influences. The study presents a framework for the development of temporality in schools, identifying a range of significant cognitive-developmental (figure 18), as well as sociocultural (figure 19) influences on children's emerging understanding. The study also offers a framework for addressing temporality within the context of the professional development of teachers.

4. Textbooks: that most history textbooks in Ireland afford temporality a low status and provide inadequate support for developing temporal ways of knowing, with some notable exceptions. The study found significant divergences in the pedagogical approaches adopted by textbook authors and it determined that student teachers are judicious in their selection and use of history textbooks and other resources in ensuring that they reflect constructivist principles of the curriculum.

5. Teaching and learning: There is an 'intended' curriculum-to-textbook gap, vis-à-vis the extent to which it provides sufficient opportunities to foster temporal understanding in deep and flexible ways; the study developed and utilised a content analysis model (Figure 14) in determining how well textbooks and other resources reflect the principles of the available curriculum, especially in their approach to

temporality. The study found that school culture played a central role in mediating the teaching of history and its influence on student teachers. It also found that where children had limited temporal language, this affected their ability to articulate the temporal aspects of historical understanding.

In addition, the study presents a dataset, based in the Irish context, arising from three inter-related strands of enquiry (Figure 2), which helps to contribute to existing scholarly debate; this data corroborates some of the existing research in the area, while also challenging and elaborating aspects of the findings of the key researchers identified in the literature review. Further, unique data is presented relating to the nature and use of textbooks in schools, and the manner in which novice teachers are apprenticed into the available culture for teaching and learning in history, including temporality. In presenting the children's perspective, it provides a theory-informed framing of children's temporal ways of knowing and their relevance for and potential contribution to historical understanding;

My study identifies a number of implications for teacher education, educational policy and practice, not just in the Irish context, but at an international level. There is a clear need to recognise and make provision for the centrality of temporal cognition in the development of historical understanding, and to redress the equivocal arguments in the curriculum, as outlined. Thus, ITE and CPD programmes will have an influential role in guiding teachers' approaches to temporal ways of knowing in the future.

A specific example of how my study is transformative is exemplified in a bi-lingual curriculum project for senior classes that I recently co-authored, entitled "Viking Ireland, A New Voyage of Discovery/Éire na Lochlannach, Turas Nua Taiscéalta (2014). Figure 20

below illustrates the specific framework that was utilised in the project for the inclusion of learning opportunities relating to children's temporal responses, including both the cognitive-developmental and sociocultural perspectives.

Figure 20: A framework for the development and elaboration of temporal understanding at a curriculum level

Temporal response	Specific example of provision made for its inclusion in the curriculum project
The production of non-conventional temporal terms	Group and paired work emanating from visual imagery, sagas and fact boxes, to initiate discussion relating to time differential involved between the Viking period and children's personal lived experiences.
The production of conventional temporal terms	Cartoon Timeline to set the Viking period in context. Strong emphasis on language development relating to temporal terms – millennium/century/decade, etc.
The development of sequential understanding, temporal order and a cognition of chronology	Use of anecdotal and visual evidence to scaffold an examination of a series of events leading up to the Battle of Clontarf.
The cognition of temporal distance in the past and temporal location	Using visual imagery and evidence from archaeological digs to place the Viking period in Ireland in a temporal context, relative to other significant historical events that the children have studied.
The relationship between autobiographical memory and temporal understanding	Provision of opportunities for children to recall and record personal events that happened five - ten years ago, as a basis for relating them to a time period dating back 1000 years.
The relationship between the development of temporal cognition and causal cognition	Using drama and examining visual imagery, fact boxes and sagas to determine if Queen Gormlaith was responsible for causing the Battle of Clontarf.
Understanding parallel time	Comparing the lives and activities of the seafaring Vikings with life in the homeland for Viking women and children while the men went A-Viking.
Awareness and use of anachronies in time	Using Viking sagas to examine story elements which reflect jumps forward (prolepsis) or backwards (analepsis) in time.
Ability to engage in temporal updating	Through the use of personal writing and drama, children are afforded opportunities to envisage what life was like for Viking children – their home lives, schooling, diets, clothes, pastimes, etc. thereby augmenting their understanding of the Viking story.
Significant sociocultural influences	Use of examples from children's grandparents of *piseóg* tales to help them relate to beliefs and fears Vikings held, especially relating to safety at sea. Examination of key Viking influences on our modern lives (names O' Loughlin, Coppinger, etc.); (language, words such as 'pónaire')

A similar need exists at ITE and CPD levels to educate teachers in judiciously negotiating the varied, inconsistent approaches to temporality in textbooks, as well as appreciating their pervasive adult-centred, middle-class construction of time, in the learning opportunities they provide for children. In particular, the imperative must be highlighted for such resources to reflect the guiding principles of the available curriculum. The content analysis model that I have presented (Figure 14) provides an instrument that teachers could utilise to determine the extent to which such resources facilitate their enactment of the intended curriculum.

Through the qualitative interviews with children, a clear link was established between the acquisition and development of children's temporal cognition and their general linguistic competence. Reminiscent of Guthrie and Hall's (1983) theories relating to discontinuity in the function and use of language between the home and the school, my study acknowledges a need to explore and value the temporal ways of knowing of disadvantaged children outside of "school language". The study identified key divergences between the temporal responses of children from the two schools, and it revealed that children in school A (the DEIS school) were utilising a more restricted range of temporal terms than their middle-class counterparts in school B, at all three levels studied. Thus, children from school A displayed a very limited repertoire of terms relating to time, and while they possessed some conventional temporal terms, their conversations were devoid of extended language. The latter cohort displayed a more extensive range of temporal language, some reflecting their ability to assimilate the new language of the narrative text provided, yet much of the terms appeared to be in their active vocabulary already.

This data has implications for wider historical understanding. It notes the need for a systematic development of temporal language through the official and enacted curriculum,

even from the junior infant level, commencing with general temporal terms and progressing to conventional temporal terms. In essence, this means facilitating opportunities for young children to experiment and play with the language of time, affording opportunities to actively use and apply both new and old language in different situations. Such a process facilitates active engagement in the investigation of ideas, enabling personal connections with the events to be forged. This reflects the type of scaffolding deemed crucial by VanSledright (1995, section 2.2.3 above) in enabling historical understanding to emerge. Likewise, it underscores Barton's (2001) theory relating to the variations in children's understandings in the two different background experiences and contexts in which the children are living. This can be facilitated in tandem with general literacy skills, through enhanced literacy and numeracy programmes, in accordance with current national and international policy. This recommendation resonates with Goldenburg's (2002) assertion that "children from low-income families are more dependent on school experiences for their academic literacy development than are middle-class children" (p. 211).

My study corroborates the claims of Fox (1993) and Bage (2006) that narrative is a powerful medium in the development of temporal cognition at all levels, and it highlights the benefits of utilising narrative as a very effective medium through which temporal language can be developed. It establishes that narrative does not need to be chronological to facilitate children's temporal cognition, as long as it addresses some of the key cognitive and sociocultural facets identified in Figures 18 and 19 above. The advantages of using narrative with younger children is highlighted, given that it can facilitate a tangible connection with past events that have not been experienced personally by the children. My study points to the need for curriculum policy to reflect and promote the potential of narrative in history teaching

in establishing linguistic competence, especially where children experience limitations, as was clearly reflected in the data procured from children in school A.

My study identified the collaborative nature of children's conversations in providing complex temporal sequences with multiple elements, and this was reflected in the interviews conducted with children at all three levels. Resonant with the constructivist theories of learning, as established at the outset (section 1.1 above), this finding concurs with Hoodless (2002, section 6.1.3 above) and establishes the need for a collaborative approach to learning in history, at paired or group levels, especially where children are experiencing a challenge in using temporal phrases and words. Again, ITE and CPD courses have a fundamental role in endorsing such a methodological approach.

Interestingly, my study notes that a recent audit was undertaken by the NCCA (2013) of language objectives in the *Primary School Curriculum* (1999) to determine the contribution of certain subjects towards their fulfilment. Yet, it only examined the degree to which the English, Irish, Drama and SPHE curricula contributed to language development; the potential contribution of the history curriculum was not acknowledged. My study recommends that the audit be extended to take cognisance of the contribution of the history curriculum, as established.

7.4: Strengths and potential limitations of this study

The school-based qualitative interviews provides data relating to children's conceptual understanding of time, at three distinct stages in their primary schooling; on entry, and as they begin and end the senior cycle of the primary system. The study could be expanded to include the remaining class levels, to determine a more complete assessment of how children

conceptualise time at each level, while also contributing to an understanding of the developmental nature of such cognition. While the data was analysed to identify a broad range of cognitive-developmental aspects of temporality that were reflected in the children's conversations, there is a possibility that other such facets may emerge. Further, while a number of significant sociocultural influences on children's temporality emerged, its extension to a whole-school level may facilitate the identification of further cultural influences, thus contributing to the available data.

Further analysis of the transcripts of the data generated by the qualitative interviews could enhance the recent findings of sociolinguistic research, such as that of the Combat Poverty Agency (2008), which examined variations in children's language that were linked to their social class and its impact on the education of children (p. 8). Reflecting the findings of Eivers et al. (2004) regarding serious underachievement in literacy among children from disadvantaged backgrounds, key divergences in the temporal language abilities of children from the two schools are specified in chapter 6. The theories of Tyler et al. (2008) are also recalled here relating to cultural discontinuity between children's home and school-based linguistic experiences. Such analysis could identify children's general linguistic responses to aspects of the stories, and a comparative analysis of their patterns of language variation could be undertaken, including what Cregan (2008) defines as

> pronunciation of words (dis/this; goin/going), vocabulary items (*jumper, chemist, boot* in Ireland compared with *sweater, drugstore, trunk* in America), and grammatical patterns (two year ago/two years ago; he didn't do nothing/he didn't do anything), p. 7.

In identifying such a possible course of action, I am mindful that I did not examine the children's lives directly. Thus, it is important not to place themes in the children's school-based talk on the same level as with a home-based 'funds of knowledge' (Moll et al., 1992)

approach, which more radically investigates their place in the world and how they negotiate their own 'figured worlds' (p. 133).

The model of content analysis I utilised was informed by the theories of key researchers in the field, including Krippendorf (1980), Strahan and Herlihy (1985), Cole (1988) and Downe-Wamboldt (1992). Such a model provides a framework for determining the level of cognitive complexity of the learning opportunities provided in history resources, while determining the degree to which they embrace and fulfil curriculum requirements. Yet, the model can have currency across all areas of the primary curriculum and could be utilised, and adapted if necessary by teachers, to determine how well a particular resource in any other subject area meets their needs. While the model is used in this study to evaluate written texts, it could equally be utilised to evaluate electronic resources. Data generated from the survey of student teachers highlights their low reliance on textbooks, yet their high reliance on the various electronic resources that are readily available to teach history. An application of this model can enhance teachers' own evaluations of such resources in determining whether they are fit for purpose.

7.5: Directions for future research

This section considers the possibilities for future research that might emerge from the three strands of my study.

7.5.1: The content analysis of history textbooks

While this analysis was undertaken with all 14 textbooks that were commercially available to teachers in Ireland at Junior Infant, Third Class and Sixth class levels, it could be extended,

using the available rubric, to provide comparable data for the remaining classes – Senior Infants, First, Second, Fourth and Fifth classes in the primary school.

My study found that no content analysis of history textbooks and workbooks had been undertaken in Northern Ireland since the introduction of its revised history curriculum in 2007. A similar analysis could be employed to determine the degree to which the NI textual materials reflect the principles of *The World Around Us* (2007) curriculum. This would facilitate a comparative analysis of approaches and methods utilised in history teaching in both settings, and would augment the joint research projects in history undertaken to date by IASSEE (2009), as outlined in section 5.3 of this study.

7.5.2: The survey of student teachers

Interestingly, all of the UG and PG respondents to this survey were apprenticed into the obsolete Irish history curriculum of 1971. Despite its formal introduction in 1999, the revised history curriculum was not implemented, in effect, until 2004/2005, with the provision of regional in-career development programmes for teachers. Thus, my study's data pertaining to student experiences of being taught history, as well as their perceived ability to teach history effectively, emanates from models that they personally encountered as primary school children, which do not directly reflect the constructivist theories and approaches (section 1.1 above) in which the revised curriculum is embedded.

The scope of my survey was limited to one cohort of UG students in their final year (conducted in 2011). Valuable comparative data could be gleaned by administering the questionnaire to a similar cohort of current students, to determine how their direct experiences as primary school children of constructivist approaches affect their dispositions

towards history teaching today. Similarly, a determination can be made of the relationship that exists, if any, between this early experience and the degree to which student teachers utilise or reject resources such as history textbooks.

7.5.3: Range of history resources

It was outside the scope of this study to examine the range of history resources selected by qualified teachers, as the survey was confined to student teachers' reporting of their school-based experiences. However, the study could be extended to directly establish the nature and extent of textbook use by teachers, as well as the criteria they use in selecting or rejecting them as resources. Additionally, data could be compiled on the range of alternative history resources that are utilised by teachers on an all-Ireland basis. Such data would enhance any future review of the implementation phase of the revised history curriculum and would contribute to the design of in-career development programmes in the area.

My study can source no additional data pertaining to the use of history textbooks as resources in schools in other parts of Ireland or in Northern Ireland. The study could be extended by administering the existing questionnaire to comparable groups of student teachers in the remaining five ITE programmes at primary level. This would provide a rich data source to complement the earlier study cited by IASSEE (2009, section 5.6) of student teachers experiences of teaching History, Geography and Science.

Mindful of Goldenburg's (2002) assertion that "educational failure results from a mismatch between children's language and experience, and the language and experience demanded by schools" (p. 243), my study highlights the need for a meaningful analysis of temporal language in school history textbooks to be undertaken to determine the degree to which there

is congruence between it and the diverse language patterns of children in different socio-economic groups. This would determine whether such texts reflect what Watson (2002, p. 46) terms a "literate" style pattern of language use, which is used less often by children in Irish disadvantaged schools (Cregan, 2008, p. 6).

7.5.4: The school-based qualitative interviews

While a wealth of valuable data relating to the temporal cognition of children was generated, the study could be extended to accommodate children from all provinces of Ireland, thus providing comparative data on the temporal cognition of children at the levels concerned. The scope of the study was limited to one urban and one rural school; extending it to a more diverse range of schools would provide greater opportunities for examining the sociocultural influences on children's temporal understanding. Thus, an extension of the study to include, for example, a school in a *Gaeltacht* area or in a S*uíomh lán-Gaelach*, an Island school or a small school with multiple classes, would generate a rich store of data relating to temporal understanding and temporal linguistic competence.

7.6: Contributions to professional growth and self-reflection

This study has been conducted from my perspective primarily as a teacher educator in the area of primary history, and I have clearly established that the study design is embedded in, and emanates from, my praxis. It has afforded me many and varied direct opportunities to critically reflect on, and appraise, aspects of my professional competence therein. Undoubtedly, it has enabled me develop a more in-depth understanding of how children conceptualise time, and a deeper appreciation of the complex, multi-faceted nature of temporality. Likewise, it has greatly enhanced my cognition of how children come to a

broader historical sense of knowing. My contribution to the professional development of teachers in this regard has changed focus, enabling me to more ably examine

a) approaches to the development of historical understanding, both at a local and international level;

b) political and policy-related interventions, and their impact on curriculum;

c) existing curriculum and pedagogical approaches.

Inevitably, my knowledge of the literature relating to this topic has been greatly enriched by undertaking the literature review. In setting out a conceptual framework for the study, I was keen to explore the cognitive-developmental aspects of children's temporal development, and available literature abounded in this regard. I struggled, however, especially in the early stages of the study, to establish the relevance of sociocultural influences on children's temporality. Specific literature on the learning processes relating to the topic was difficult to locate and this made it difficult to conceptualise the precise relationship between children's understanding of time and the social and cultural factors that influence it. Yet, the extent of such influences became abundantly clear, especially as key themes began to emanate from children's conversations about time in the school-based interviews. The identification of six significant factors in this element of the study provided a clear, concrete representation of such influences.

Through the examination of rationalism and the references to Goodson's work (1993, section 2.2.9) in the study, I examined the low status of history as a subject within the current knowledge hierarchy. There is little political impetus or will to reform the history curriculum at the present time; pressure to compare favourably with international norms, as well as economic concerns, determine that priority is accorded to areas of the curriculum such as literacy, numeracy, technology and science. Nonetheless, it behoves subject specialists in

history to present authoritative perspectives on the need for reform, based on pertinent, scholarly research and an in-depth knowledge of literature in the area. Towards this end, I have availed of many opportunities to disseminate my research at a national level through conferences and seminars, and I am committed to continue to contribute to academic debate, as it pertains to my study in the future, both at a national and international level. In particular, I intend to challenge the complacency that currently exists around curriculum review in history, through engagement with relevant professional organisations.

Working closely with the children who were involved in the school-based interviews was a very worthwhile, challenging experience for me, and the highlight of my study. Reminiscent of Kvale and Brinkmann's (2009) distinction (section 3.4.1 above) between the "miner" and "traveller" metaphors of undertaking interviews, I designed and conducted the sessions to meticulously comply with data protection protocol. Yet, while I was comfortable in communicating with children of this age group as an experienced teacher and teacher educator, my role as researcher in this process was challenging. It introduced me to a new dynamic and I was intent on maintaining a highly professional approach during the interviews in my quest for what Docherty and Sandelowsky (1999, section 3.4.1 above) term the "faithful rendering of childhood experiences", thereby adopting, albeit inadvertently, the "miner" mantle. In hindsight, this resulted in me imposing an adult-centred, linear perspective on the interactions and discussions, while inevitably hindering some new opportunities for children's reactions to be heard. Despite this shortcoming, the children's responses proved to be an informative data source, reflecting many facets of the content of the theoretical framework set out in the literature review. I have endeavoured to preserve the richness of their responses by recounting them directly in detail in chapter 6 and Appendix 5 of my study.

The experience of designing a content analysis model for history textbooks has provided me with an in-depth knowledge of their content and methodological approaches. The process of undertaking such a critique has enabled me to identify a range of criteria that can enhance the analysis of texts across other areas of the curriculum, and the promotion of such an approach to the assessment of texts is beneficial in my role as a teacher educator, a student mentor and a curriculum developer.

Likewise, my understanding of how student teachers are apprenticed into the available culture for teaching history is greatly enhanced by reflecting on their responses to the survey. Their confidence in embracing history teaching as a result of their increased content knowledge is encouraging and, in keeping with other pertinent Irish research conducted across 5 teacher-education programmes in Ireland, points to the effectiveness of professional development in changing negative practices that may have been experienced during their own schooling.

7.7: Concluding thoughts

Man alone measures time.
Man alone chimes the hour.
And, because of this, man suffers a paralyzing fear that no other creature endures,
A fear of time running out.
Mitch Albom (p. 8).

This study began with an intrigue about children's utterances and how they reflected their temporal ways of knowing. It led to a series of research questions being posed, each of

which resulted in a very interesting journey of discovery and enquiry, before claims could be reached or understandings drawn. For me, these journeys were always fascinating, often intricate to a point of exasperation, mostly convoluted rather than experienced in straight lines, yet nonetheless, truly worthwhile and both personally and professionally fulfilling. Their outcome resulted in conclusions being drawn, which can contribute to the literature and scholarly debate in the area of temporal ways of knowing and historical understanding. The study's findings are of relevance at both a national and international level, and have the potential to influence curriculum policy in relation to historical understanding.

Generally, I have experienced a keen level of interest in the subject by colleagues and acquaintances who enquire about the focus of my research. Almost invariably, they comment on the captivating nature of the topic and the pervasive impact of time on our lives, as well as on the children we teach. Yet, in spite of its omnipresent influence, they observe the core substance of my study, the complexity of coming to any meaningful understanding of how we acquire a sense of time.

In addressing that question, this study involved a fascinating, intricate journey through a labyrinth of avenues, leading to an interrogation of the topic. This meaningful journey ends, as many do, with a sense of anticipation of how best to proceed to the next phase, knowing that whatever was learned and experienced along the way, there is more to discover, more to understand and more to teach about children's understanding of time.

Appendices

Appendix 1: UCC Social Research Ethics Committee (SREC)

ETHICS APPROVAL FORM

Approval obtained on 28-11-2012

Name of applicant	Eileen O' Sullivan Date 18 October 2012
Contact Details	Phone: 087-6501049 Email: Eileen.osullivan@mic.ul.ie
Department/Unit	PhD Student, Department of Education
Title of project	Understanding children's concepts of time and chronology: The History Curriculum of the Primary School.

		YES	NO
1	Do you consider that this project has significant ethical implications?		NO
2	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	YES	
3	Will participation be voluntary?	YES	
4	Will you obtain informed consent in writing from participants?	YES	
5	Will you tell participants that they may withdraw from the research at any time and for any reason, and (where relevant) omit questionnaire items to which they do not wish to respond?	YES	
6	Will data be treated with full confidentiality / anonymity (as appropriate)?	YES	
7	If results are published, will anonymity be maintained and participants not identified?	YES	
8	Will you debrief participants at the end of their participation (i.e. give them a brief explanation of the study)?	YES	
9	Will your project involve deliberately misleading participants in any way?		NO
10	Will your participants include schoolchildren (under 18 years of age)?		YES
11	Will your participants include people with learning or communication difficulties?		NO

12	Will your participants include patients?		NO
13	Will your participants include people in custody?		NO
14	Will your participants include people engaged in illegal activities (e.g. drug taking; illegal Internet behaviour)?		NO
15	Is there a realistic risk of participants experiencing either physical or psychological distress?		NO
16	If yes to 15, has a proposed procedure, including the name of a contact person, been given? (see no 23)		

DESCRIPTION OF THE PROJECT

Aims of the project: The project aims to examine children's conceptual understanding of time and chronology, two key concepts to be developed within the history curriculum of the primary school. Data-collection takes place in three phases:

1. an examination of history textbooks and workbooks to determine whether they support children's conceptual understanding in this regard (no ethics approval required for this phase);
2. an examination of student teachers' experiences of the level of reliance by schools on history textbooks and workbooks;
3. a school-based examination of children's conceptual understanding of time and chronology, using case study as a methodology.

It is for phases 2 and 3 phase of the research that permission is sought from the Ethics Committee.

Brief description and justification of methods and measures to be used (attach copy of questionnaire / interview protocol / discussion guide / etc.)

In **phase 2**, final year undergraduate and postgraduate Education students of Mary Immaculate College, Limerick will be invited to take part in a short survey to determine their experience of using history textbooks and workbooks while on teaching practice during the previous semester (Appendix 4 attached). Following a Pedagogy of History lecture, on an appointed date, students will be <u>invited</u> by me to participate in the study by completing the questionnaire and returning it to a sealed box in the room. The questionnaire takes 3-5 minutes to complete. At this point, the applicant will leave the lecture room and will have no further contact with students regarding the questionnaire. Assistance will be provided a member of the administrative staff of the Faculty of Education (who has no other contact with the students) in distributing and collecting questionnaires. Students will be assured that their participation is entirely voluntary and no one is obliged to participate.   The identity of respondents is <u>not</u> sought, students will be assured that no stakes will be associated with participation or non-participation.

Approval to conduct this phase of the research has also been sought and acquired from the Research Ethics Committee of Mary Immaculate College (MIREC) in advance.

In **phase 3** of the research, primary school children will be involved in the study to investigate children's narratives about time in the past. The children will work in the familiar setting of their classroom, a setting chosen in accordance with the approach recommended by Friedman (1982) and Alderton (1994) when undertaking such research work with young children. The procedure involves the researcher sharing a story with the children, in pairs. Using the medium of story, this will focus on children's vocabulary of time, specifically, their use of temporal and deictic terms, as well as their understanding of such aspects of temporal cognition as "parallel time", "anachronies in time" (jumps in time periods in the story). Further, I will aim to assess the children's awareness of chronology, especially their ability to sequence events within a chronological narrative.

The children will then be asked to answer questions (see attached) and a discussion will take place to determine their understanding of the particular story. These discussions will be recorded and transcribed.

I will select three challenging stories (eg. *The Time Seeker* for 6th class*, The Night Horse* for 3rd Class and *Tell me the day Backwards* for Junior Infants) to test children's understanding beyond a simple, sequential awareness of chronology. The stories will not involve any subject matter that children would be likely to find distressing or difficult. The rationale for their selection is that they belong to a genre that `plays with time' and use it non-chronologically as a literary device. In summary, they depict child characters that travel in and out of dream time or imaginary time that co-exists with the measured time of the adult world.

In addition, using an interview technique, each of the pairs of children will be asked to describe specific daily events and routines in their lives – when they get up in the morning, go to school, the timing of certain events at school, eg., first break, lunch break, etc., after school, things they do outside of school, whether with a parent, siblings, friends. The interview questions are set out in Appendix 3 (attached). Finally, using the 'draw and write' technique advocated by Mauthner (1997), the children will be asked to draw and label a timeline of events in their daily lives, based on the series of events described by them in conversation with the researcher.

These conversations will be transcribed by the researcher and used for analysing how the children's time is spent on a day-to-day basis. A comparative analysis will take place between this data and that derived from recent Irish surveys that explore temporal discourse in Ireland.

Participants: recruitment methods, number, age, gender, exclusion/inclusion criteria

In **phase 2,** 100 final year B. Ed students and 50 final year postgraduate students will be recruited for the survey of history textbook use. As their lecturer in Pedagogy of Education, on an agreed date, I will invite students from each cohort to take part in the survey, following a lecture and students will be given advance notice.

In **phase 3**, cases of 12 children in each of two schools will be investigated: two at junior infant class level, 2 at third class level and 2 at sixth class level. The children will be selected by teachers on the basis of their suitability to engage with the researcher and the stories. One school (School A) is situated in an urban, densely populated area of Limerick City, with DEIS status (designated as serving an economically-disadvantaged community) and single stream classes of mixed gender and ethnic diversity, with some speaking English as an additional language. The other school (School B) is situated in a rural setting in County Limerick, with multi-grade classes of mixed gender, a greater proportion of middle-class and professional families, relatively little ethnic variation and all children speaking English as a first language.

Concise statement of ethical issues raised by the project and how you intend to deal with them

In **phase 2** of the research, it is anticipated that no ethical issues will be raised during the course of the study.

In **phase 3** of the research, considerable care has been taken to select stories that will not cause any distress to the children. Thus, it is anticipated that while no serious ethical issues will be raised during the course of this study. While children will be asked to provide details of their daily activities both within and outside of school (eg., sports, hobbies, cultural pursuits, games) no personal details will be sought or used in the research. Anonymity will be preserved at all times and a class teacher will be present in the classroom while the study is undertaken with children (Appendix 3 attached)..

Arrangements for informing participants about the nature of the study (cf. Question 3)

In **phase 2** of the study, participants will be informed in advance of the nature of the study and the content of the questionnaire. A date for distributing the questionnaires will be agreed and students will be assured that they are not obliged to take part in the survey.

In **phase 3** of the study, an information meeting on the nature of the study will be held initially with the principal of each school, to be followed by a meeting with each class teacher concerned. Informed consent will be sought before proceeding with the study. An information meeting will then be arranged with each child's parents and informed consent will be sought. Specific arrangements will be made for undertaking the work with children and the debriefing with children will follow.

How you will obtain Informed Consent?

In **phase 2** of the research, informed consent will be sought before proceeding with the study by ticking a consent box at the top of the survey form. Participants are not asked to identify their name.

In **phase 3** of the research, informed consent will be obtained from the principal of each school, following full consultation (Consent form 1 attached). The relevant teacher of the age-group in question in the school will then be contacted and consent will be sought to conduct the research in his/her classroom (consent form 2 attached).

Relevant consent will be obtained directly from each child's parent(s), following a briefing/information meeting with the parent(s) of each child (consent form 3 attached). On an appointed date, I will subsequently meet the parent(s) in the classroom with the child and explain the procedure and purpose of the study to the child in the presence of the parent(s). The study will proceed thereafter, without the presence of the parent.

In addition, children will be asked by the researcher to provide separate accent for participation in the study (consent forms 4 (third and sixth class children) and 5 (junior infant children) attached).

Outline of debriefing process (cf. Question 8).

In **phase 2** of the research, I will thank students for their participation and inform them that they can access the survey findings on my site on the MI college Local Area Network (LAN), on completion of the data analysis process.

In **Phase 3** of the research, I will thank each child at the end of the interview and drawing session and explain that I am studying the drawings and words children use when they are describing things that happened in the past or that might happen in the future. I will tell them that I will be using this information for a study that I am doing in college. Should any unforeseen issues arise in the course of the conversation, I will refer them to the class teacher and principal and ensure that school policy is observed at all times.

Estimated start date and duration of project.

Phase 2: December 2012 – January 2013

Phase 3: December 2012 – January 2013

Signed: Eileen O' Sullivan   Date: 18 October, 2012

Applicant

References:

Alderton, P. (1994), *'Researching children's rights to integrity'* in Mayall, B. (Ed.). *Children's Childhoods: Observed and Experienced*, London: Falmer.

Arrigan, M. (2001). *The Night Horse* in The Magic Emerald English Language Programme. Dublin: Folens (pp. 131-144).

Fre1dman, W. J. (1986). The development of children's knowledge of temporal structures. *Child Development*, 57, 1386–1400.

Lamb, A. (2012). *Tell Me the Day Backwards*. London: Walker Books.

Mauthner, M. (1997), *Methodological Aspects of Collecting Data from Children: Lessons from three research projects*. Children and Society, Vol. 11, pp. 16-28.

Murphy, M. (2001), *The Time Seeker* in The Magic Emerald English Language Programme, Dublin: Folens pp.113-128.

Notes

1. Please submit this form and any attachments to Dr. S. Hammond, Chair, SREC, c/o Fiona O'Shea, Office of the Vice President for Research and Innovation, Block E, 4th Floor, Food Science Building, University College Cork, College Road, Cork. Please also forward an electronic copy to f.oshea@ucc.ie

2. Research proposals can receive only provisional approval from SREC in the absence of approval from any agency where you intend to recruit participants. If you have already secured the relevant consent, please enclose a copy with this form.

3. SREC is not primarily concerned with methodological issues but may comment on such issues in so far as they have ethical implications.

This form is adapted from pp. 13-14 of Guidelines for Minimum Standards of Ethical Approval in Psychological Research (British Psychological Society, July, 2004)

Last update: 2011-07-19

Eileen O'Sullivan
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25th March 2013

Dear Eileen,

Thank you for submitting your research (project entitled Understanding children's concepts of time and chronology: The History Curriculum of the Primary School) to SREC for ethical perusal. I am pleased to say that we see no ethical impediment to your research as proposed and we are happy to grant approval.

We wish you every success in your research.

Yours sincerely,

J Hammond

Sean Hammond
Chair of Social Research Ethics Committee

Professor Anita R. Maguire BSc PhD CChem MRSC
Vice President for Research and Innovation

Ollscoil na hÉireann, Corcaigh
National University of Ireland, Cork

Open-ended questions based on the story *"The Time Seeker"* (Sixth Class text).

The following list of semi-structured questions provides the basis for discussion with the children, following the reading of the chosen text. The questions may vary, according to children's responses.

Sample questions relating to '*The Time Seeker'*:

1.   Tell me about Alan's dream.

2.   How long do you think it lasted?

3.   How long did it take him to get home from school?

4.   What happened when he went down the lane?

5.   How long was he prepared to stay in the building?

6.   Can you describe what happened when Alan got inside the building?

7.   Why couldn't he leave?

8.   What did the woman mean when she said "It's not the right time"?

9.   Who was she?

10.   What did she mean when she said she was a "time seeker" and that she could "read time"?

11.   What could Alan do inside the house that he could not do outside the house?

12.   How old do you think Alan is?

13.   How old do you think the woman is?

14.   What did the glass ball do?

15.   What did she mean by "blowing your future away"/

16.   What did she see happening earlier? How long ago did that event take place?

17.   Why do you think she was looking into his past?

18.   What happened when the ball turned white?

19.   What happened when the ball cleared of all colour?

20.   How long had the boys been waiting for Alan?

21.   What happened at the end of the story?

Open-ended questions based on the story *"Night Horse"* (Third Class).

The following list of semi-structured questions provides the basis for discussion with the children, following the reading of the chosen text. The questions may vary, according to children's responses.

Sample questions relating to *"Night Horse":*

1. At what time of the year did Maria visit Grandpa Groves?

2. How long did she spend at Grandpa's house?

3. How old do you think Grandpa was?

4. What time did Maria first hear the horse?

5. How did her mother react when Maria told her about the horse?

6. How did Maria feel about the horse the next day?

7. Maria was able to trace the horse's hoof prints all the way into the village. What happened next?

8. How long do you think was Maria in the village?

9. What did Grandpa mean when he said "The Horse. You've seen him…the blacksmith…It's time"?

10. What did Maria's mom mean when she asked if Maria was doing a family tree?

11. When did her mom first hear the family legend of the Groves blacksmith?

12. Tell me what you know about him.

13. When did the horse come back again? Why?

14. Maria said that she could feel the strength of the link with all her ancestors through the horse. What do you think she meant by that?

15. When did Maria go fishing with Grandpa?

16. When did Grandpa begin to feel better? Why?

17. According to the story that Grandpa told, how long ago did Grovesmed the Blacksmith help Sigurd?

18. What did Sigurd promise Grovsmed in return for his help with the lame horse?

Open-ended questions based on the story "Tell Me the Day Backwards" (Junior Infants).

The following list of semi-structured questions provides the basis for discussion with the children,

following the reading of the chosen text. The questions may vary, according to children's responses.

Sample questions relating to *"Tell Me the Day Backwards"*:

1. When did Timmy Bear go to bed?

2. When did he and his mom play the game "Tell Me the Day Backwards"?

3. What did Timmy Bear do just before he got into bed? What time was that?

4. Do you remember what happened before that?

5. When did Timmy Bear eat his supper?

6. What happened before that?

7. I wonder if you know what time of the year it was?

8. When did Timmy Bear see the fish?

9. How did he get into the water?

10. What happened before that?

11. What time was it when he ate the honey?

12. When did Mummy Bear think that Timmy should have come to find her?

13. How many meals did Timmy and his mom have to eat that day? Can you tell me which one he ate first, second, third?

14. When did he eat the ants?

15. What time did Timmy and his mom get up that day? What did he see?

16. What happened right before that?

17. How long were Timmy, his mom and dad asleep?

18. How long will they sleep tonight?

19. How long did it take Timmy and his mom to tell their bedtime story?

Interview form for use with children, following discussions on story.

I'm trying to get a sense of the activities that you do during the day. Can you describe the following things for me?

When do you get up in the morning?

What time do you go to school?

What time is small break at school, lunch break?

What time does school finish?

Is there something that you do at school that you really like? What time does this go on?

After school, do you have any activities planned?

Can you tell me what these are?

Do you any activities after school with your friends?

Can you tell me what these are?

Do you do any activities after school with your brothers and sisters or parents?

Can you tell me what these are?

Could you pick any one day of the week and draw a picture of the activities that you do in that day. Can you start with the morning activities and work through the day, showing me what you do.

Informed Consent Form for Teachers and Parents of Research Participants

Purpose of the Study. As part of the requirements for a PhD in Education at UCC, I have to carry out a research study. The study is concerned with examining young children's understanding of time and chronology and it focuses on children aged 4-12 years.

What will the study involve? The study will involve looking at children's ability to understand time and chronology. I plan to undertake this work in a classroom setting while the class teacher is present. The work will be done in a quiet space with two children at a time, while the teacher is working independently with the rest of the class. I plan to read a story with the children and then discuss it with them. I will be using questions that I have prepared in advance with all the children in the study. I will audio record the session. Afterwards, I will be analysing the children's language of past events. This will involve examining the language of time that they use when describing the events in the story, as well as their capacity to understand how long ago some of the events in the story took place.

In addition, using an interview technique, each of the pairs of children will be asked to describe specific daily events and routines in their lives – when they get up in the morning, go to school, the timing of certain events at school, eg., first break, lunch break, etc., after school, things they do outside of school, whether with a parent, siblings, friends. The interview questions are set out in below (attached). Finally, the children will be asked to draw and label a timeline of events in their daily lives, based on the series of events described by them in conversation with the researcher.

These conversations will be transcribed by me and used for analysing how the children's time is spent on a day-to-day basis.

Why have you been asked to take part? You have been asked because the children in this class and school are generally suitable to provide data for this study.

Do you have to take part? No, participation is voluntary. If you choose to take part, you will be asked to sign a consent form (attached). Then, I will give you this information sheet and a copy of the signed consent form. You have the option of withdrawing from the study, without repercussions, at any time, whether before it starts or while you/are participating.

You can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

Will your participation in the study be kept confidential? Yes. I will ensure that no clues to the child's identity appear in the thesis. Any extracts from what they say that are quoted in the thesis will be entirely anonymous.

What will happen to the information which you give? The data will be kept confidential for the duration of the study. On completion of the thesis, they will be retained for a further six months and then destroyed.

What will happen to the results? The results will be presented in the thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the course. The study may be published in a research journal.

What are the possible disadvantages of taking part? I don't envisage any negative consequences for your child in taking part.

What if there is a problem? At the end of the interview, I will discuss with the children how they found the experience and how they are feeling. This will be done in the presence of the class teacher and/or the school principal.

Who has reviewed this study? Approval must be given by the School of Education, UCC and the UCC Social Research Ethics Committee before studies like this can take place. Two supervisors have carefully reviewed the study also: Dr. P. Conway and Dr. K. Kitching of the School of Education, UCC.

Any further queries? If you need any further information, you can contact me:

Name: Eileen O' Sullivan

Mobile number: 087-6501049

E-mail address: Eileen.osullivan@mic.ul.ie

If you agree to take part in the study, please sign the consent form overleaf.   Thank You.

Form 1: Consent Form for Principal Teachers

I …………………………………… agree to participate in Children's Understanding of Time and Chronology research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for the children's interview with Eileen O' Sullivan to be tape-recorded.

I understand that the children can withdraw from the study, without repercussions, at any time, whether before it starts or while they are participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising the school's and the children's identities.

I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below:

Please tick **one** box:

I agree to quotation/publication of extracts from my interview

I do not agree to quotation/publication of extracts from my interview

Signed……………………………………….   Date……………….

Form 2: Consent Form for Class Teachers

I ………………………………… agree to participate in Children's Understanding of Time and Chronology research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for the children's interview with Eileen O' Sullivan to be tape-recorded.

I understand that the children can withdraw from the study, without repercussions, at any time, whether before it starts or while they are participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising the identity of the school and the children.

I understand that disguised extracts from the children's interview may be quoted in the thesis and any subsequent publications if I give permission below:

Please tick **one** box:

I agree to quotation/publication of extracts from the children's interview

I do not agree to quotation/publication of extracts from the children's interview

Signed……………………………………   Date……………….

Form 3: Consent Form for Parent (s)

I/we…………………………………agree to participate in Children's Understanding of Time and Chronology research study.

The purpose and nature of the study has been explained to me in writing.

My child is participating voluntarily.

I give permission for my child's interview with Eileen O' Sullivan to be tape-recorded

I understand that my child can withdraw from the study, without repercussions, at any time, whether before it starts or while he/she is participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my child's identity.

I understand that disguised extracts from my child's interview may be quoted in the thesis and any subsequent publications if I give permission below:

Please tick **one** box:

I agree to quotation/publication of extracts from my child's interview

I do not agree to quotation/publication of extracts from my child's interview

Signed…………………………………. Date……………….

Form 4: Consent form used as part of the process for conducting research with children in third and sixth class

I agree to take part in a workshop where a story will be read to me and my ideas about it will be discussed. (Please write yes/no)

Then, I agree to draw a picture of the activities I do on a normal day.

(Please write yes/no)

The reason for the research has been explained to me and I know I can withdraw at any time. (Please write yes/no)

Signed: _____

Class: _____

Date: _____

Form 5: Consent form used as part of the process for conducting research with children in junior infants

Would you like to hear me read you both a story?

Yes	No

Then, can I ask you about what is happening in the story?

Yes	No

Could you draw a picture of what is happening in the story?

Yes	No

Appendix 2: Data pertaining to the Content Analysis of History Textbooks

4.1.1.2: *Earthlink* Junior Infant Programme (2004), Folens.

Authors: Connolly, C., Connolly, F., Courtney-Murphy, B., Gaynor, L., Healy, F., Keating, G., Tiearney, J. and Whelan, D.

15 activities are available in this text and a cross-curricular approach is adopted, with History being merged with Science, Geography or SPHE. In the introduction to the Earthlink series, an assertion is made that "the series marks a new departure in publishing", based on two key factors:

(a)   the four curricular subjects of History, Geography, Science and SPHE are linked from junior infants to sixth class;

(b)   the requirements of the Revised Irish Primary Curriculum for History, Geography, Science and SPHE are met.

The first of these statements would appear to represent an interpretation of the approach proposed in the Revised Curriculum, rather than reflect the actual approach recommended. While a cross-curricular, multidisciplinary approach to planning and teaching is advocated, at no point in the curriculum is there a stated requirement that all aspects of SESE and SPHE must be integrated, so this interpretation is erroneous. The strict juxtaposition of all four areas throughout the text represents a tendency towards a narrow segmentation and a denial of the natural links that might be made with other aspects of the curriculum which could potentially contribute to temporal cognition, especially temporal language, which is intrinsic to the curriculum at infant level.

The level of cognitive complexity of the activities contained in this text can be described as predominantly literal in nature, evoking low-order references and responses. These can be characterised as involving, in the main, observation and/or recall of detail or factual

information. The opportunities provided for the development of temporal cognition represent 50% of the educational activities provided, yet, in the majority of cases, limited potential exists for the development of such conceptual understanding, due to the nature of the cognitive process involved. The text provides children with little opportunity to engage in higher-order thinking or learning, and it provides little challenge to supply a personal response, involving thought, opinion or a deduction. Only one of the 15 activities supplied facilitates a higher-order level of engagement, where children would be facilitated to give many possible responses or individual opinion.

Thus, it can be concluded that the assertion made by the authors at the outset does not hold true, namely that the requirements of the national curriculum are met.   The activities, as presented, do not adequately support the development of the key skills of time and chronology.

Table 6: *Earthlink* Junior Infant Programme

Activity Number	Nature of Educational Activity	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of the concept of time, as outlined	Potential contribution to the child's understanding of concept of chronology, as outlined
1	Comparison between hand size of baby and child aged 4	Drawing	2	2
2	Comparison between size/age of self and age of baby	Drawing	2	2
3	Naming members of family, as depicted	Naming	6	6
4	Drawing picture of self in context of family	Drawing	1	1
5	Observing growth in tree	Drawing	3	3
6	Sequencing three events in a story	Telling story, colour	3	3
7	Recording an activity for each of five school days	Drawing	3	3
8	Comparing and sequencing stages of growth of children	Sequencing, numbering	5	5
9	Picture perception - completing fourth picture in sequence	Tell story, anticipate next picture	4	4
10	Comparing old and new toys	Child draws their favourite toy	5	3

11	Literal sequencing of four pictures	Tell story, colour picture	3	3
12	Colour familiar character from Irish history	Colour picture. Trace name of character	3	3
13	Picture perception using medium of photographs	Discussion of differences	3	3
14	Observing two pictures in a sequence	Discussion -anticipation what happens finally	3	3
15	Observing three pictures in a sequence	Discussion - anticipation of what is missing from first picture	3	3

4.1.1.3: *All Around Me Junior Infant Activity Book* (2010), Educational Company

Authors: Dee, M., Goff, H., Hourihan, J., Kilfeather, P. and Ó Loinsigh, C.

This text provides no introduction or rationale for the educational approach adopted. Instead, each activity provides a caption and an outline of the educational activity to be undertaken for the reader. An emphasis is placed on language development throughout, using the medium of art (tracing, drawing and colouring) to achieve the desired learning outcome. 6 activities in History are provided and these are predominantly presented as combined with other areas of the SESE programme of learning.

Opportunities for the development of the child's temporal cognition exist in the text, but these are predominantly of a literal nature, involving basic sequencing of events and a recall of information. Potentially, a number of the activities could provide opportunities for further development of the skills and concepts, but such potential remains underexploited. For example, reference is made to trees in Winter (p.5) and Spring (p. 15) which could provide ample opportunity for the development of the child's elementary concept of a "Family Tree". Yet, the child is merely required to engage in a literal interpretation of content, colouring and observing basic detail. This represents a missed opportunity which a discerning teacher could reverse with a minor adaptation to the approach advocated.

It is noted that reference is made by the authors to the potential of the individual activities for developing a range of skills. However, this study finds that such potential is weak and there appears to be limited correlation between the level of cognitive complexity of the activity, as espoused, and the level of cognitive challenge provided for the child. For example, the text claims that

> children come to understand that items found now (artefacts) can help us to realise what happened in the past (p. 20).

This study can find no basis for the claim and contends that the process afforded by the activity cannot reasonably be expected to achieve the desired learning outcome. Such inconsistencies have not been eliminated in the recent reprinting and publication of this text (2010) and it is questionable whether evaluations of the original text (2002) were conducted with practitioners in the intervening period. Such discrepancies may account for the poor uptake by teachers of this resource, as outlined in section 4.2 earlier, where none of the 150 respondent to the survey of student teachers reported the use of this text in their classrooms.

Table 7: *All Around Me Junior Infant Activity Book*

Activity Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology
1	Child draws self and colours picture.	Child discusses their unique nature and identifies parts of the body.	2	2
2	Child draws Christmas Tree and decorations.	Child discusses the significance of this event in the year.	2	2
3	Engage child in telling story of four pictures depicted.	Child recounts story of pictures provided and identifies and discusses the sequence of events.	3	6
4	Engage child in conversation about their growth at different stages.	Child recounts the story from the pictures provided and identifies and discusses the sequence of events.	3	3
5	Engage child in conversation about items they used as a baby, but no longer use now.	Child explores and discusses reasons why they no longer use some of the items depicted.	6	6
6	Engage child in conversation about an accident.	Child recounts the story from pictures and identifies the sequence of events.	4	4

4.1.1.4: *What a Wonderful World* Junior Infant Activity Book (2010), C. J. Fallon.

Authors: Griffin, A and Sheehy, L.

This text provides 12 activities specifically in History, while acknowledging links with other aspects of the SESE area of the curriculum. The authors provide no introduction or justification for the approach adopted, but they clearly outline the nature of each activity and its curriculum relevance in a colour-coded table of contents. The use of colour images is designed to enhance the text in many of the activities provided.

The writer notes that a significant level of potential exists in the 11 educational activities presented for the development and consolidation of children's concepts of time and chronology. Three of the activities present opportunities for the child to engage at a higher-order level, as the text provides a challenge to supply a personal response, involving thought, opinion or a deduction. In such instances, it can be noted that the child would be facilitated to give many possible responses or individual opinions. The level of cognitive complexity of half of the activities can be described as predominantly literal in nature, involving low-order references and responses.

The text is devoid of assertions regarding the fulfilment of curriculum objectives or requirements. Yet, the nature of the cognitive complexity of the activities provided is such as to fulfil the curriculum requirements that the key skills of time and chronology be fostered.

Table 8: *What a Wonderful World* Junior Infant Activity Book

Activity Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Engage child in conversation about objects used by a baby.	Child discusses and identifies some objects that a baby needs.	3	3
2	Engage child in conversation about children depicted in three pictures and their own baby photograph.	Child discusses the changes that occur from babyhood to childhood.	4	4
3	Engage child in colouring pictures of objects associated with Halloween.	Child selects colours listed.	2	2
4	Engage child in distinguishing between two sets of old and new items depicted.	Child discusses images of modern and older items and circles relevant word in box.	4	3
5	Engage child in determining sequence of two sets of pictures.	Child colours the initial step of both sets of pictures.	4	4
6	Engage child in determining correct sequence of pictures.	Child colours the final step of both sets of pictures.	4	4
7	Engage child in conversation about Irish Saint.	Child colours picture of saint.	3	3
8	Engage child in determining correct sequence of three sets of pictures.	Child numbers four pictures and sequences them in the correct order.	4	4
9	Engage child in distinguishing between four sets of old and new items depicted.	Examination of simple historical evidence to explore concept of change and continuity.	4	4
10	Engage child in sequencing four events in a story.	Consolidation: language 'first', 'second', 'third' and 'fourth'.	4	4
11	Engage child in ticking boxes to identify 7 potential motor-coordination tasks that he/she can undertake.	Child identifies the chronology of events in a story and records a family event through art.	3	3

4.1.2.2: *History Quest 3*, C. J. Fallon (2003)

Author(s): No bibliographical detail is provided for the authors of the text.

The author(s) state that the History Quest series is designed to provide continuity of approach for all classes, ranging from third to sixth. They assert that the key principles of the primary curriculum are reflected in the approach adopted throughout. *History Quest 3* presents 15 chapters of work at this level, adopting such methods as story, use of images and activities for children to complete.

The writer notes that a significant level of potential exists in the 15 educational activities presented for the development and consolidation of children's temporal cognition. Interestingly, the authors have confined the opportunities for the development of such concepts to a limited number of chapters of the text. Specific activities are designed to overtly engage the child in the development of concepts of time and chronology. This is stated as the expressed learning objective of the activities and a range of educational methods are utilised, involving active participation on the part of the child. Such methods include the use of drama, story, timelines, character study and writing to explore and anchor the concepts. The nature of the cognitive complexity of the activities provided is such as to fulfil the curriculum requirements that the key skills of time and chronology be fostered. As outlined in section 4.2 above, this textbook is cited as the most commonly used in the 150 classrooms of the student teachers surveyed.

Table 11: *History Quest 3*

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Explore important events in their family	Child undertakes oral and written work on family tree.	4	4
2	Child is introduced to an Irish legend.	Sequencing events in story and develop empathy with characters depicted.	3	4
3	Child explores period in history through the use of images, cartoon and timeline.	Child can engage with the topic through the medium of story, timeline, diary entries and visual images.	4	4
4	Child examines changes over time to the production of milk.	Child sequences stages in milk production and undertake a character study.	3	3
5	Child is introduced to life in a monastic settlement.	Child engage with topic through the medium of story, timeline, diary entries and visual images.	4	3
6	Child explores traditions associated with feasts of Christmas, Ramadan and Diwali.	Child is given information on traditions and celebrations associated with three religions.	3	3
7	Child explores a Roman legend.	Child explores a chronology of events in a story.	3	4
8	Child explores life in ancient Egypt.	Development of empathy - story, drama and visual image.	3	3

9	Child explores history of the Maoris people.	Child explores information regarding their way of life.	3	3
10	Child explores a legend of Helen of Troy.	Child engages with story through medium of story, art, drama and visual image.	3	3
11	Child explores theme of early people and ancient societies – the Vikings.	Child is provided with visual images to assist empathy and understanding.	3	3
12	Child explores theme of transport through the ages.	Child explores information through visual images of older and newer forms of transport.	4	4
13	Child explores theme of Famine in Ireland.	Child is provided with information through visual images to assist empathy and understanding.	3	3
14	Child explores theme of Explorer of Antarctic.	Child engages in character study.	4	4
15	Child explores theme of World War 2.	Child explores theme of life in Ireland at time.	3	3

4.1.2.3: *Window on the World* (Third Class), Educational Company (2009)

Author: Gannon, H.

In the introduction to this series of textbooks, the author makes no reference to the development of concepts of time and chronology. The content is set out over 17 chapters and a topic-based approach is utilised.

In this textbook, limited opportunities are presented for the development of temporality. With the exception of the first activity, no particular reference is made to these key skills and concepts. There is a very strong reliance on text and an outline of content to be taught. Multi-disciplinary approaches are outlined, with a significant emphasis on the acquisition of additional information.   Sources of such information are often recommended, using information and communication technologies (ICT), as appropriate.

Given the level of cognitive complexity of the activities provided, it is difficult to envisage that the key skills of time and chronology can be fostered through the use of this teaching

resource. From the outset, the author gave little recognition to the development of these skills and they did not feature as an expressed learning objective of the activities. This may account for the sole effort made in chapter 1 of the text to develop a specific activity relating to time and chronology. The predominant emphasis on knowledge acquisition fails to provide the breadth and balance of experience required to achieve the objective. Yet, student teachers cite this textbook as being in use in 20% of the classrooms where student teachers undertook their teaching practice placements, as outlined in section 4.2 above.

Table 12: *Window on the World* **(Third Class)**

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Exploration of child's personal and family history.	Child creates personal timeline, a family album, a time capsule and a timeline.	4	4
2	Child is introduced to an Irish legend.	Recount sequence of events in story and develop empathy with characters.	3	3
3	Exploration of topic 'toys in the past'.	Child engages in a line of development study, using timeline	6	6
4 and 5	Life in Ancient Egypt.	Acquires and consolidates information.	3	3
6	Child explores an Irish legend.	Child acquires and consolidates information through story, art and drama.	3	3
7	Child is introduced to life in a monastic settlement.	Child acquires and consolidates information through medium of reading, visual images, drama and art.	2	2
8	Child explores theme of the Vikings.	Child is provided with visual images and facts to assist understanding.	2	2
9	Child explores theme of play.	Child investigates games played in past.	2	2
10	Child explores pictures from the past.	Child acquires information from visual images.	2	2
11	Child explores evidence to make deductions about past.	Child examines evidence about the past.	3	3
12	Child explores theme of life in 1950's.	Child is provided with visual images to assist empathy.	3	3
13	Child explores theme of the Space Age.	Acquires information from visual images.	3	3
14	Work of an archaeologist.	Acquires information from visual images.	3	3
15	History Quiz.	Child answers series of literal questions.	2	2

4.1.2.4: *It's About Time, History Activities and Skills* (Third Class), Folens (2010)

Author: Clancy, C.

As the title of this series of textbooks suggests, the author asserts the overt intention to "develop an understanding of time and chronology" (p. 2). The content is set out over 20 chapters, termed "units" and a topic-based approach is utilised.

The text relies very heavily on the presentation of information through a limited number of educational activities: "filling in the blanks", the use of "word boxes" or visual clues as prompts. There is a strong and over-reliant emphasis on the presentation of new content and language, using techniques such as comprehension exercises, cloze tests, true or false statements, multiple choice options and crossword puzzles. Frequently, completion of the activities was difficult for this writer, as the material lacked cohesion and was often devoid of sufficient detail to enable realisation of the intended learning outcome. On examination, it is evident that the majority of the activities engage the child predominantly in developing literal thinking skills, with little evidence that the child could extend and develop their thinking beyond the recall of information. The child is not guided to access other resources in the pursuit of answers, and the use of ICT is not recommended as a possible route to further learning. Much of the factual information provided is disjointed and limited, with poor scaffolding of learning for the child. For example, Unit 13, in dealing with the topic of "Communication", introduces the child to the meaning of an "ideogram" (p.48). The child is asked to draw an ideogram for night, having viewed an example of an ideogram for sunset. The request is likely to give rise to considerable confusion on the part of the child, as insufficient explanation is provided and no further source of additional information is recommended.

The title of the text *It's about Time, History Activities and Skills* is explicit from the outset in the skill-based approach it claims to adopt. This assertion of approach is again reiterated in two further places, with the assurance that the child will "… develop History Skills and Discovery Learning" (p. 2). However, this study finds that the range and nature of skill development is limited to the narrow gleaning of knowledge from the sources provided in the text, and temporal cognition is poorly supported therein. This may be a factor in understanding why the text was not in use in any of the 150 classrooms cited by respondents to the survey, as presented in section 4.2 above.

Table 13: *It's About Time, History Activities and Skills* **(Third Class)**

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Exploration of child's personal and family history.	Child numbers pictures in correct order, explores concept of family tree and heraldry.	3	4
2	Story of Marco Polo.	Child acquires and consolidates information	3	3
3	Child explores theme of early people and ancient societies – the Bronze Age.	Child acquires and consolidates information, using visual and textual prompts.	6	6
4	Child explores an Irish legend.	Child acquires and consolidates information.	2	2
5	Child explores story from lives of people in the past – "Landmarks in Medicine".	Child acquires and consolidates information, using visual and textual prompts.	3	3
6	Child introduced to theme of games and pastimes in past.	Child acquires and consolidates information, using visual and textual prompts and a timeline.	3	3
7	Child explores an Irish legend.	Child is provided with visual images and facts to assist understanding.	2	2
8	Theme of early people and ancient societies – the Celts.	Ibid.	2	2
9	Child explores theme of African Peoples.	Child acquires information, using visual and textual prompts.	2	2
10	Child plays game.	Child plays game designed to consolidate new learning acquired in previous units.	3	3
11	Child explores theme of The Titanic.	Child acquires information, using visual and textual prompts.	3	3
12	Child explores myth – Robin Hood.	Ibid	3	3
13	Child explores life in Ancient Egypt.	Ibid	3	3
14	Child explores theme of communication.	Ibid	3	3

15	Child explores theme of World War 2.	Ibid	3	3
16	Child explores theme of Journey to Moon.	Ibid	3	3
17	Child explores theme of life in 1950's.	Ibid	3	3
18	Child explores theme of clothes and fashion.	Ibid	3	3
19	Child explores theme of life in 1950's.	Ibid	3	3
20	Child explores theme of Pop Culture in 1950's and 1960's.	Ibid	3	3

4.1.2.5: *Earthlink* (Third Class), Folens (2004)

Authors: Connolly, F., Connolly, C., Courtney-Murphy, B., Gaynor, L., Healy, F., Keating, G., Tiearney, J., and Whelan, D.

In the introduction to the *Earthlink* series of textbooks and workbooks for this level, the authors state that it "represents a departure in Irish primary school publishing in that it links the four curricular subjects of SESE and SPHE and that it meets the requirements of the Revised Irish Primary Curriculum" (p. 2). In particular, it notes that the general principles of linkage and integration have been adhered to. The content is set out over 56 chapters, each having a foundation in one of these four areas, but with links to one of the other three areas also. 16 chapters relate specifically to history.

This study can find little evidence to support the author's claim that temporal cognition is developed through the text. Yet, the text is popular among teachers, with 28% of student teachers reporting that it is in use in the classrooms where they undertook their placements. The authors adopt a limited range of educational methods, most notably the reading of text and answering questions which are predominantly pitched at a literal level. A very limited emphasis is placed on skill development, and there is a clear overreliance on the provision of

factual information, with little attention to the process by which the child can assimilate such learning. This is the only series of textbooks which provides an additional activity book, with the expectation that the relevant skills and competencies are developed by the activities outlined.

The text relies on a level of literacy that could be challenging for the child who has a lower level of linguistic competence, even where the text is accompanied by cartoons and other visual prompts to make stories accessible. While oral and written communication skills are encouraged, there is little variety in the forms of expression promoted, with a marked reliance on sentence completion. The range of communication skills advocated in the revised curriculum have scarcely been utilised in the text - the development of timelines, personal writing, diary entries, poetry, drama techniques and personal expression through art. Most notably, the skill of empathy is poorly developed, with little emphasis on the child making personal connections, or engaging in a critical manner with the content. The child is principally confined to a passive role in acquiring and consolidating learning.

While dates, timelines and periods in time are presented, there is no opportunity for the child to assimilate the information or test their ability to place relevant events in sequence. A key strength of the textbook is its well-researched content and attractive design, including the abundance of appealing, informative cartoons and photographs. However, such media are not used by the authors in providing opportunities for the development and reinforcement of concepts of time and chronology.

Table 14: *Earthlink* (Third Class)

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	Games and Pastimes.	Exploration of topic using text, skipping game, matching game, colouring and questions.	3	3
2	The First Farmers.	Exploration of topic using text, picture and questions.	3	3
3	Legend of Setanta.	Child reads script, colours picture and completes crossword, completes sentences and acts out scene.	3	3
4	Farming and food.	Explores topic using text and questions.	3	3
5	Legend of Oisín in Tír na nÓg.	Child reads script in cartoon form, answers "true" or "false" to statements, answers literal questions, acts drama and completes map.	3	3
6	The Stone Age.	Exploration of topic using text, pictures, questions, completes sentences and colour picture.	3	3
7	Homes.	Explores topic using text, pictures, questions, colouring and matching exercise.	3	3
8	The Bronze Age.	Explores topic using text, pictures, colouring, completes sentences, unscramble words and questions.	3	3
9	Legend of Cúchulainn	Child reads script in cartoon form and colours picture.	3	3
10	Legend of Saint Partick	Child reads script in cartoon form, completes sentences, answers 'true' or 'false', colours pictures.	3	3
11	Legend of Romulus and Remus.	Child reads script in cartoon form, answers 'true' or 'false', shades pictures, unscrambles words.	3	3
12	Stones (History and Geography).	Exploration of topic using text, story, pictures and completes sentences.	3	3
13	Story of famous Irish People.	Child reads script in cartoon form, answers questions, completes sentences, uses atlas.	3	3
14	Dublin in the Middle Ages.	Exploration of topic using text, story, pictures, timeline, answers questions and colours picture.	3	3
15	Famine Times.	Exploration of topic using text, colours picture, questions, word search.	3	3
16	Legend of Daedalus and Icarus.	Child reads script in cartoon form, answers questions and colours pictures.	3	3

4.1.3.2: *History Quest* 6, CJ Fallon (2010)

Authors: Unknown

It is stated that the History Quest series is designed to provide continuity of approach for all classes, ranging from third to sixth. From the outset, the author asserts that the text will assist teachers in their management of time for the subject, providing a balance of instructional material and work activities. The content is set out in 12 chapters, with 3 additional activities designed to consolidate new learning and aid in the assessment of children's learning. There

is an acknowledgement of the potential of the material to promote children's language development and teachers are encouraged to select material that suits the individual needs of the school, using the local environment as a resource, as appropriate. Specifically, the authors espouse an activity-based approach to the learning and overtly state the aim to develop the skills of the historian, *viz.*

> to enable children to acquire the skills and concepts associated with time and chronology, empathy and sequence, cause and effect. (p. 3).

Despite the authors' assertions at the outset that the text would offer opportunities for the development of concepts of time and chronology, this study can find little evidence to support this claim. While dates and periods in time are referred to, there is minimal opportunity for the child to engage in a critical manner with the information. The dates are merely presented, with no emphasis on the child's ability to assimilate the information or test the ability to place relevant events in sequence.

Timelines, some with visual prompts, are provided, yet activities which would encourage and support engagement with them are not. There is poor potential for conceptual development of the period in time to which they refer, or a sense of the chronology of events described. The textbook's design is attractive, with an abundant use of appealing, informative cartoons and photographs, but their potential for advancing temporal cognition is underutilised. The authors provide well-researched content and strong emphasis is placed on the provision of knowledge, supported by written activities which primarily assess the level of acquisition of this knowledge. However, there is minimal scope for the development of skills. The level of cognitive complexity of the material rarely extends beyond the literal and there are few instances where the child is facilitated to provide a personal response.

A better balance of content and skill development would greatly enhance future revisions of this text, as well as achieve the objectives set out by the authors. Significantly, the text is reported by student teachers to be in use in 43% of the classrooms where they undertook their placements, making it the most popular history textbook, as cited (section 4.2 above).

Table 17: *History Quest* **6**

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	The Celts.	Exploration of topic using text, pictures and questions.	3	3
2	Feasts and Festivals.	Exploration of topic using text, picture and questions – true/false, fill in the blanks.	3	3
3	Plantations & Settlements 1.	Child reads script in cartoon form, colours picture, completes sentences, word search and true/false activity.	3	3
4	The Aboriginal People.	Child reads script, observes pictures and cartoons, completes sentences, word search and 'fill in the blanks', create diary entries, create a poster.	3	3
5	Plantations & Settlements 2.	Exploration of topic using text, picture and questions – true/false, fill in the blanks.	3	3
6	The Liberator – Daniel O' Connell.	Exploration of topic using text, pictures, questions, completes sentences, creates journal entries.	3	3
7	The Great Famine.	Exploration of topic using text, pictures, questions, true/false and word puzzle.	3	3
8	The Gaelic Revival.	Exploration of topic using text, pictures, questions, true/false statements and personal writing.	3	3
9	Marie Curie.	Exploration of topic using text, pictures, questions, true/false statements and personal writing.	3	3
10	1916 Easter Rising.	Exploration of topic using text, pictures, questions, true/false statements, fill in the blanks, exploration of newspaper report.	3	3
11	World War 2.	Exploration of topic using text, pictures, questions, true/false statements and crossword puzzle, poster design.	3	3
12	Martin Luther King Jr.	Exploration of topic using text, pictures, questions, fill in the blanks, select true statement from 3 options, word search and create newspaper headline.	3	3
13	History game.	Dice game.	3	3
14	History quiz.	Assessment of children's learning.	3	3
15	Project:History of School.	Engage in group work to explore development of school in community.	3	3

4.1.3.3: *What a Wonderful World* (Sixth Class), C.J. Fallon (2005)
Author: Halligan, J.

The author introduces this text by outlining the different approaches taken in the History, Geography and Science chapters, in exploring the underlying theme of how wonderful the world is. A perspective is provided on how this is to be approached: the child is encouraged to consider how he/she can develop the skills of thinking as a historian, thinking as a geographer and thinking as a scientist. The process involved in thinking as a historian is delineated in a series of questions that the child is encouraged to ask:

When did this happen? What was it like to be alive then? What evidence can I find to tell me about that time? How did people deal with the day-to-day problems of living in that time? How did their lives differ from mine? Can I learn anything from their mistakes and their successes? Would I like to live in that time?

A strong emphasis is placed on the additional research that can be undertaken by the child. The child is encouraged to use a timeline, availing of the one supplied with the text or to create an individually designed timeline. 8 chapters provide the basis for learning in History and generic titles are provided.

The topic-based approach adopted in this text is advocated in the Revised Primary School Curriculum, the rationale being to avoid a strictly chronological approach to teaching in history. However, it is likely that it marks a new departure for many teachers, who have, heretofore, seen the traditional chapters of history textbooks as discrete units of work, relating to a period in history.

In this text, the author enables key events and developments in the past to be explored, using a successful combination of attractive visual imagery and sections of information, in a

manner where the child can participate actively in the learning process. There is a perceptible challenge for the child throughout, with opportunities to develop the skills of working as a historian, as follows:

- empathy with the characters and situations depicted;

- consideration of cause and effect, as well as change and continuity, using examples of past events and practices and how they shape and influence our lives in the present;

- synthesis of old and new learning;

- communication, using a variety of oral, written and artistic methods;

- time and chronology, allowing the child to make seamless links between events, rather than periods in time, leading ultimately to the relevance of the events on present-day and future living.

Yet, this latter skill could be further developed and augmented in the text in future revisions with the overt use of timelines. While encouraged in the introduction by the author (p. 3), it cannot necessarily be assumed that all users of the text will value the relevance of a timeline. Such an assumption is evident, for example, in chapter 9, "Modern Times 3", where the child is prompted to engage in a project to explore life and events in the 20th century, with little emphasis on how events depicted can be understood in terms of the time and sequence in which they occurred. The text is cited as being in use in just 13% of the classrooms where student teachers undertook their placements (section 4.2 above).

Table 18: *What a Wonderful World* (Sixth Class)

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	A Place in Time.	Aerial photographs, Ordnance survey maps (old and new) are examined as a basis of study, with challenge at a variety of levels.	4	4
2	Modern Times 1.	Child acquires/consolidates information, using visual and textual prompts, completes sentences and word boxes.	3	3
3	Modern Times 2.	Child acquires and consolidates information, using visual and textual prompts and completes sentences.	3	3
4	Modern Times 3.	Child engages in research project. Visual prompts provide a basis for the research.	3	3
5	Moving People.	Child acquires and consolidates information, using visual and textual prompts, completes sentences and accesses additional resources.	3	3
6	History, Environment and Technology.	Child investigates how understanding of materials causes technology to develop, how technology impacts on the course of history, using visual and textual prompts, completes sentences and accesses additional resources.	3	3
7	A Place to Work.	Child investigates how the physical and historical environment affects human activity today, using visual and textual prompts, completes sentences and accesses additional resources.	3	3
8	100 Years of Flight.	Child investigates the history of flight and how technology has evolved.	3	3

4.1.3.4: *Earthlink* (Sixth Class), Folens (2004)

Authors: Connolly, C., Connolly, F., Courtney-Murphy, B., Gaynor, L., Healy, F., Keating, G. and Whelan, D.

The authors outline the closely integrated nature of the content presented, and state that

> …proponents of the menu approach to History, Geography and Science will be particularly satisfied with the *Earthlink* series (p. 2).

No reference is made to the manner in which the text proposes to approach the development of historical skills and concepts. The content is set out over 72 chapters, each having a foundation in one of the four areas, including SPHE, but with links to one of the other three areas also. 20 chapters relate specifically to History.

While the *Earthlink* programme for Third Class reflected a commendable range of approaches, in accordance with curriculum guidelines, a review of this text demonstrates that, by contrast, a very strong emphasis has been placed by the authors on a limited range of educational methods and the level of cognitive complexity of the activities offered is basic. Most notably, these include the reading of text and the answering of questions which are predominantly of a literal nature, requiring recall of information in the form of true/false statements, sentence completion, colouring and matching exercises.

No overt reference was made by the authors to the development of the relevant skills through the text. Yet, it is evident that many of the activities provide a level of potential for the development and consolidation of these particular skills, even if this is not stated as a key objective. It could be argued that a clearer focus on skill development from the outset, in line with the recommendations of the revised primary school curriculum, would have enhanced the opportunities for providing experiences which would meet this objective. Thus, for example, timelines, where they occur, could have been designed with a more child-centred, accessible approach in mind. Where they exist, they tend to be presented at the beginning of a chapter, yet there is little direct reference to them, little opportunity for the child to actively engage with them, and no opportunity for the child to actually complete a timeline.

Similarly, the accompanying workbook provides no further opportunity for the enhancement of temporality. There is a strong reliance on text-based completion of reports, accounts and incomplete passages of information, primarily designed to assess the recall of information pertaining to the topics. This represents a missed opportunity, where ample scope existed in the text for the development of the skills through such techniques as drama and sequencing activities.

The authors provide few educational activities that challenge children's thinking. There is very little opportunity for the child to provide higher-order responses - arguing and supporting opinions, developing empathy with the characters and providing evaluations of whether life "in the past" was better or worse than that experienced by children today.

Table 19: *Earthlink* **(Sixth Class)**

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology
1	Fionn and the Giant.	Child reads script in cartoon form, colours picture and completes sentences.	3	3
2	St. Colmcille	Child reads script in cartoon form, completes sentences and examines timeline.	3	3
3	Going to school.	Exploration of topic using text and questions and pictures of artefacts.	3	3
4	Buildings and ruins.	Exploration of topic using Local Trail and picture perception activities.	3	3
5	The Ancient Egyptians.	Exploration of topic using text, pictures, questions and "fill in the blanks" exercise.	3	3
6	The Aztecs.	Explores topic using text, pictures, questions, completes sentences, colours picture	3	3
7	The Industrial Revolution.	Exploration of topic using text, pictures, questions, role play and story.	3	3
8	The American Revolution.	Exploration of topic using text, pictures, labelling and completes sentences,	3	3
9	The French Revolution.	Child reads script in cartoon form, colours pictures and completes sentences.	3	3
10	19th Century Ireland.	Exploration of topic using text, pictures, labelling and completes sentences.	3	3
11	Nomads.	Exploration of topic using text, pictures, labelling and sentence completion.	3	3
12	Ireland c 1900.	Exploration of topic using text, story, pictures and sentence completion.	3	3
13	1916-Independence	Exploration of topic using text, story, pictures and sentence completion.	3	3
14	Civil War in Ireland	Exploration of topic using text, story, pictures, timeline, answers questions and colours picture.	3	3
15	A Soldier of Ireland.	Child reads script in cartoon form, answers questions, fill in the blanks activity.	3	3
16	Women in History.	Child reads script in cartoon and written form, answers questions and uses timeline.	3	3
17	World War 2 (1).	Exploration of topic using text, maps, story, pictures and answers questions.	3	3
18	World War 2 (2).	Exploration of topic using text, story, pictures and answers questions.	3	3
19	The Odyssey.	Child reads script in cartoon form, reads story and answers questions.	3	3
20	Northern Ireland.	Exploration of topic using text, pictures and answers questions.	3	3

4.1.3.5: *Window on the World* (Sixth Class), Educational Company (2009)

Author: Gannon, H.

The author introduces the text by placing key emphasis on the development of skills in history, to be acquired by engaging in activity-based methods. None of the relevant skills are specified, but a central focus of the text is the child working as historians. The content is set out over 17 chapters and a topic-based approach is utilised.

The text places a very deliberate emphasis on the skills of "working as a historian", among them the concepts of time and chronology. The majority of activities present opportunities for the development of temporal awareness and understanding, to varying degrees. Throughout, the child is engaged in educational activities which promote and consolidate skills, using a variety of media - timeline, picture perception, primary evidence, story, question time, creative time, puzzle time and a "time detective" game. The use of such varied sources is unique and provides interesting experiences for children, such as the use of secondary sources, as outlined (pp. 47-49). Eye-witness accounts, personal writing and the use of documentary evidence allow for the development of the skill of empathy. It is likely that the child can communicate his/her own perception of what life was like at the period in time, as depicted, thus facilitating an opportunity for the child to assimilate the new learning with greater ease. The author advocates the use of extended projects on a limited number of specific topics, an approach that is in keeping with the requirements of the revised curriculum, enhancing the breadth and depth of learning for the child.

The author has placed considerable emphasis on the provision of educational activities that challenge children's thinking. Typically, questions are pitched to assess different levels of

understanding, involving literal, inferential, critical and appreciative responses. Given the cognitive complexity of the activities provided, this resource provides the classroom teacher with a range of educational activities that enable the curriculum requirements to be developed and consolidated as regards the concepts of time and chronology. Despite this, however, data from the survey of student teachers (section 4.2) indicates that this text is selected by just 10% of the class teachers in whose class placements were undertaken.

Table 20: *Window on the World* **(Sixth Class)**

Chapter Number	Activity Description	Nature of Cognitive Complexity of Activity	Potential contribution to the child's understanding of time, as outlined	Potential contribution to the child's understanding of chronology, as outlined
1	My Locality through Ages.	Exploration of local history using interview, primary and secondary sources, extended project, question time, creative time, puzzle time and time detective.	4	4
2	Farming through the Ages.	Exploration of topic through medium of timeline, artefacts, pictures, question time, creative time, puzzle time and time detective.	4	4
3	Native Americans.	Child acquires and consolidates information through medium of story, question time, creative time, puzzle time and time detective.	3	3
4	The Healing Waters.	Child reads script in cartoon form, answers questions, question time, creative time, puzzle time and time detective.	3	4
5	The Maoris.	Child acquires and consolidates information through medium of timeline, story, question time, creative time, puzzle time and time detective.	3	3
6	The Renaissance.	Ibid.	3	3
7	Remembering School.	Child acquires and consolidates information through medium of picture, primary evidence, story, question time, creative time, puzzle time and time detective.	4	4
8	The Liberator.	Ibid.	3	3
9	Planes, Trains, Automobiles.	Ibid.	4	4
10	World War 1.	Ibid.	3	3
11	The Emergency.	Ibid.	3	3
12	Children of War.	Ibid.	3	3
13	Ireland, the EU and the UN.	Ibid.	3	3
14	Heroes from the Past.	Ibid.	4	4
15	Quiz Time.	Assessment of new learning through questions	3	3

Appendix 3: Questionnaire to determine the use by student teachers of history textbooks and workbooks in Irish primary schools

Questionnaire:

This questionnaire is designed to acquire information on the use of history textbooks and workbooks in schools during your teaching practice placement. I would be most grateful if you would complete it and return it to me.

Please complete the following questions:

Section A: Demographic Variables

A1. Gender: please tick, as appropriate.

Male ___   Female ___

A2. Teaching experience to date: please tick, as appropriate.

_____ Less than 1 year teaching experience

_____ Between 1 and 5 years teaching experience

_____ More than 5 years teaching experience

A3. Age: please tick, as appropriate.

_____ Less than 25 years old

_____ Between 25 and 35 years old

_____ More than 35 years old

Section B: Experience of Teaching History while on TP placement

B1. Please state the class you were teaching on your <u>last</u> Teaching Practice placement

B2. Was a history <u>textbook</u> in use in this class?

     Please circle, YES / NO

B3. If yes, please state the name of the textbook.

B4. Was a history <u>workbook</u> in use in this class?

     Please circle, YES / NO

B5. If yes, please state the name of the workbook.

B6. Were you requested/required to use the textbook for the history lesson(s) taught by you during the placement?

If **<u>yes</u>**, please describe how you were required to use the textbook.

If **<u>no</u>**, please elaborate

B7. Were you requested/required to use the workbook for the history lesson(s) taught by you during the placement?

If **<u>yes</u>**, please describe how you were required to use the workbook.

If **<u>no</u>**, please elaborate

B8. Were you permitted to use other history resources? If yes, please list all the resources used.

Section C: Student Experience of Learning History

C1. 'I enjoyed studying History at <u>primary</u> school level'.

Please tick, as appropriate

Yes ____   No ____

C2. 'I enjoyed studying History at <u>secondary</u> school level'.

Please tick, as appropriate

Yes ____   No ____

C3. 'I am studying History as an academic subject at <u>third</u> level'.

Please tick, as appropriate

Yes ____   No ____

C4. 'I feel very comfortable with my knowledge of history as a subject'.

Please tick, as appropriate

Yes ____   No ____

C5. 'I feel very comfortable teaching history as a subject'.

Please tick, as appropriate

Yes ____   No ____

Thank you for completing this questionnaire

	Appendix 4 : Application for Ethics Approval
	Mary Immaculate Research Ethics Committee
	MIREC-3: Application Form

Instructions:

1. Complete all relevant sections of this form. The information provided must be comprehendible to non-experts.

2. Attach a copy of all relevant documentation to the application. Failure to provide the necessary documentation will delay the consideration of the application.

3. If the applicant is a Research Postgraduate Student their Supervisor(s) must sign Section 4 of this form.

1a	Title of Research Project:

An Examination of the use of History Textbooks and Workbooks by students in MIC on Teaching Practice

1b	Brief Outline

The writer wishes to undertake research to determine the nature and extent of the use of history textbooks and workbooks by MIC student teachers while on teaching practice placements in primary schools

2	**Proposed Start Date**	It is proposed that the research will be conducted in the period December 2012, as follows:

Student cohort	Date of placement	Number	Class level
Graduate Diploma C	December 2012	60	Infant Class level
Graduate Diploma A	December 2012	65	Middle Class level
B. Ed. 3 Students	December 2012	460	Senior Class level
Graduate Diploma C	December 2012	60	Senior Class level

	Anticipated Completion Date	*December 2012*

3	Project Investigators				
3a	**Principal Investigator**				
Name	Eileen O' Sullivan				
Department & Position	Department of Learning, Society and Religious Education, Education Faculty, MIC				
Qualifications	B. Ed., M. Ed.				
E-mail & Phone	eileen.osullivan@mic.ul.ie Tel. 204975/087-6501049				

3b	**Other Investigators (use additional sheet if necessary)**	
Name	**Qualifications & Affiliation**	**Signature**
NONE		

3c   Foresight

Not Applicable

3d   Ethical Guidelines / Ethical Clearance from Another Source

Are there Ethical Guidelines to which you must adhere in your field of study? If yes, please specify below:	**Yes**		**No**	**NO**

Do you require Ethical Clearance from another source? If yes, please specify below:	**Yes**		**No**	**NO**

UCC Social Research Ethics Committee (SREC)

Approval obtained on 28-11-2012

4	Supervisor(s)

To be completed in cases where the applicant is a research postgraduate student.

I hereby authorise the Principal Investigator named above to conduct this research project in accordance with the requirements of MIREC-6 and I have informed the Principal Investigator of their responsibility to adhere to the recommendations and guidelines in MIREC-6.

Name	**Department**	**Date**	**Signature**
Not Applicable			

5	Study Descriptors

Please mark the terms that apply to this research project with a ✔

Healthy Adults	✔	Vulnerable Adults	
Children (< 18 yrs)		Vulnerable Children (<18yrs)	
Physical Measurement		Psychological Measurement	
Video Recording/Photography		Voice recording	
Questionnaire/Interview		Observational	
Physical Activity		Record Based	
Project is Off-Campus		'Other' descriptor(s) not named here	
Please specify 'Other' descriptor(s)			

6	Project Design and Methodology
6a	**Rationale, Purpose and Benefits of Research Project**

As the college lecturer in Pedagogy of History, I wish to undertake this study to determine the nature and extent of the use of history textbooks and workbooks by student teachers while on teaching practice placement in primary schools.   Such a study will influence the design of future teaching practice preparation sessions with students, as well as the range of resources made available for students in the college library or electronically.

The rationale for including students from my own lectures in this study is to glean information <u>directly</u> from them relating to their use of textbooks and workbooks in history during their teaching practice placement. I wish to determine the names of the textbooks and workbooks in use, the numbers of students who used them, the range of other resources used.

6b(i)	**Research / Data Collection Techniques**

The writer proposes to undertake this research with three cohorts of education students in Mary Immaculate College, Limerick in the academic year 2010/2011. Specifically, students will be informed that a short questionnaire has been devised to glean information regarding their use of history textbooks and workbooks while on TP placement. After a lecture, on an appointed date, students will be <u>invited</u> to participate in the study by completing the questionnaire and returning it to a sealed box in the room. The questionnaire takes 3-5 minutes to complete. At this point, the applicant will leave the lecture room and will have no further contact with students regarding the questionnaire. Assistance will be provided a member of the administrative staff of the Faculty of Education (who has no other contact with the students) in distributing and collecting questionnaires. Students will be assured that their participation is entirely voluntary and no one is obliged to participate. The identity of respondents is <u>not</u> sought, students will be assured that no stakes will be associated with participation or non-participation.
All completed questionnaires will be returned to the applicant in due course.

6b(ii)	**Research Methodology**

A short questionnaire will be administered to four cohorts of students, as outlined in section 2 above

6c	**Steps taken to Minimise Risk**

No risk envisaged

6d	**Location(s) of Project**

Mary Immaculate College

6e	**Questionnaires and Interview/Survey Questions**

Questionnaire attached (See Appendix 2 above)

7	Participants

7a	How will potential research participants be identified and selected?

Potential research participants will consist of MIC students who attend lectures in Pedagogy of History

7b	If you have indicated that you will be including students from your own classes in the study, please provide details of the steps you are taking to ensure that their participation is voluntary, and that they can withdraw without consequence at any time.

An informed consent form is provided, on which participants are assured that

- their responses are anonymous

- participation is voluntary

- they are free to withdraw from the research at any time

- all information gathered will remain confidential.

After a lecture, on an appointed date, students will be <u>invited</u> to participate in the study by completing the questionnaire and returning it to a sealed box in the room. The questionnaire takes 3-5 minutes to complete. At this point, the applicant will leave the lecture room and will have no further contact with students regarding the questionnaire. Assistance will be provided a member of the administrative staff of the Faculty of Education (who has no other contact with the students) in distributing and collecting questionnaires. Students will be assured that their participation is entirely voluntary and no one is obliged to participate. The identity of respondents is <u>not</u> sought, students will be assured that no stakes will be associated with participation or non-participation.
All completed questionnaires will be returned to the applicant in due course.

7c	How many participants will be recruited?

Student cohort		Number	
Graduate Diploma C		60	
Graduate Diploma A		65	
B. Ed. 3 Students		460	
Graduate Diploma C		60	

7d	Will participants be reimbursed for taking part in this research project? If YES, please attach the details to this application.	Yes		No	✔

| 7e | Will incentives / inducements be provided to participants for taking part in this research project?
If YES, please attach the details to this application. | Yes | | No | ✔ |
| 7f | Will Recruitment Letters/Advertisements/e-mails, etc. be used to recruit participants?
If YES, please attach the details to this application. | Yes | | No | ✔ |

8	Confidentiality of collected data and completed forms (e.g. informed consent)
8a	What measures will be taken to ensure confidentiality of collected data?

No names of respondents will be required and no details of location of TP placement will be sought

8b	Where and how will the data be stored / retrieved?

The data will be stored by researched in her office

8c	Who will have custody of, and access to, the data?

Researcher

8d	For how long will the data from the research project be stored? *(Please justify)*

A period of 2 years

9	Information Documents

Indicate which of the following information documents are applicable to your Research Project by ticking either Yes or No in the checklist below. Attach a copy of each applicable information document to the application.

Documents	Applicable Please ✔	
	Yes	*No*
Participant Information Sheet		✔
Parent/Responsible Other Information Sheet		✔
Participant Informed Consent Form		✔
Parent/Responsible Other Informed Consent Form		✔
Questionnaire (or sample)	✔	

10   Declaration

The information in this application form is accurate to the best of my knowledge and belief, and I take full responsibility for it. I undertake to abide by the ethical principles outlined in the MIC Research Ethics Committee guidelines. If the research project is approved, I undertake to adhere to the study protocol without unagreed deviation, and to comply with any conditions sent out in the letter sent by the MIC Research Ethics Committee notifying me of this. I undertake to inform the MIC Research Ethics Committee of any changes in the protocol, and to submit a Report Form upon completion of the research project. I accept without reservation that it is my responsibility to ensure the implementation of the guidance of MIREC as outlined in MIREC-6.

Name (Print) ____Eileen O' Sullivan_____ **Signature** _____

Appendix 5
Data accruing from qualitative interviews with children

In keeping with the framework identified by Kvale and Brinkmann (2009) for reporting interview quotes (pp. 279-281), excerpts from both interviews deemed pertinent for this study were extrapolated from the full transcript and presented side-by-side to facilitate the identification of any related convergences and divergences in children's responses, which has been explored in Chapter 6 above. The excerpts were categorised according to the aspects of temporal cognition they reflect. These are presented in Table 29 below.

8.1: Interviews with Junior Infant children

Table 29: Categorisation of excerpts from Junior Infant transcripts - cognitive-developmental influences

Category of temporal cognition	Responses School A	Responses School B
A: Emerging nature and production of temporal terms	Random counting - D: 8, 9, 10, 11, 12, 13,14,15,60. I: Do you mind, both of you, if I read a story? H: 17, 80, 90.	I: T, how about you? When you're tucked up in bed at night, how long do you stay in bed? T: 8. I: 8 what? T: 8 ahm, 8 o' clock. M: I stay in bed these minutes. I: Is that 10, M? M: Yes, 1, 2, 3, 4, 5, 6, 7, 8. 9, 10.
	H: Because, he's only a half age. I: What do you mean, "He's only a half age?" D: Because he's only that size (indicating with his hands the same size as the picture of the teddy in the book).	I: How long do you think it would take him to jump off the rock and into the pool? M: A little 1 hour. I: How about you, T? How long do you think it might take? T: 10 minutes.
	I: What time of the day do you think it is? H: 1 o' clock D: 4 o' clock. I: Why do you say 1 o' clock, H? H: I think it's 1 o' clock? I: Why is that? H: Because, it's a little bit of dark and a little bit of bright and that when it is 1 o' clock.	

	D: 4 o' clock. I: Ok. Why did you say it was later, D? D: Because it was 2 to 4. The small hand is on 2 and the big hand moved all the way up to 4. There was 6 o' clock, it will be 1, 2, 6 (pointing to numbers on the chart in the room).	
B: The production of conventional temporal terms	D: My baby brother's name is Jake and he's only 1 and a half. I: Is that all? He's only 1 and a half? D: Yeah and I'm 5. I: You're 5. H: I'm 5 as well. I: You're 5? So how much older are you now than your baby brother? D: Ahm, 5 and nearly 6.	M: It's my last day at school. I: It's your last day of school. And what day is that, the last day? M: Ahm, I don't know. T: It's gonna be a half day. I: T, do you know what day today is? T: I don't know.
	I: Look at picture: What time of the day do you think it is in that picture? H: 2 o' clock. I: Why do you say that? D: Because loads of sun, (pause), loads of sun is 2 o' clock.	I: But is it morning time or night time? T: Morning time when the butterflies are out. I: But I wonder what time of the year is it? Is it the time when Santa comes? M: No, Spring. I: Why do you say that, M? M: Because the butterflies are not Winter animals.
	I: H, tell me why you said it was 1 o' clock in the picture? H: Because, that hand it says 1 o clock (pointing to a chart on the wall of the interview room). D: Well, H, if you had a picnic at 1 o' clock or 2 o' clock, you could eat is so fast, because it would be night time, H.	I: Can you remember when your school play happened? Was it this week? M: I think it was this week. I: Or was it last week? T: I think it was last week. I: Ok, don't worry about it. Was it a little while ago or a long while ago, which? M: It was a long day.
C: Sequential understanding, temporal order and chronology	I: Why were the bees chasing him? D: Because he took their honey and they flew out of the tree and turned there and stinged him on the arm.	M: After my Nana's, I'm going to be so excited, 'cos when I wake up in the morning, Santa comes.
	I: Ok. Now, H, what do you think happened *before* he put his hand into the honey? H: The bees flied out. I: Was that after, I wonder? D: No, I'm right because that was the first thing.	I: When do you think he was doing that? M: After his picnic. I: T, what do you think? T: After the sunset. I: Or do you think it was before the sunset? T: No.
	D: I'd ask my mam if I could go to the bees and my mam said no. **Also F – temporal cognition and causal cognition**	
	D: Do you know what, they are caterpillars first and they twist and twist and they wrap around and they go to sleep and twist all around and then get wings and they fly and they turn into a butterfly. I: That's a lovely story. You are absolutely right. They do.	I: Can you tell me what Timmy bear did before he went to bed? M: He was playing and then he brushed his teeth and then he went to bed.

D: The cognition of temporal distance in the past and temporal location	I: Exactly. He has his hat on. I wonder what time of the day it is? H and D: Pause. No response. I: Have a look at the picture. D: It's sunny. H: 1 o' clock. D: It's 2 o' clock. H: It's 1 o' clock. H: Because it's bright and it's 1 o' clock? D: Because there's some dark there.	I: Is there anything happening next week? M: Santa is coming … in 7 weeks. I: 7 weeks? T: My mom said it's only 2 weeks.
	I: H, how long do you think he was asleep? It says he was asleep all Winter. H: 16 hundred years. D: H, it might be hundred days.	I: Why did the animals go to sleep for the long Winter? M: 'Cos they are not Winter animals … they are Summer animals, bears.
	I: D, can you listen to this question and tell me the answer to it. How long do you think they were asleep? D: For hundreds of times. I: Were they? They were asleep all winter, how long do you think that was? D: A hundred.	
E: The relationship between autobiographical memory and temporal understanding	I: H, what time do you think it is now in the picture? H: Ahm, 4 o' clock. D: 2 to 6. I: Why do you say that? D: Because when someone is very lazy, then they have to sleep every day. H: 'Cos bears go sleep only for days in the daytime.	M: I think that's his daddy and he likes to watch the sunset and I like to watch the sunset with my daddy.
		I: This is a very nice story as well about a teddy and his mom. T: He can't get to sleep. M: Neither can I sometimes.
F:The relationship between temporal and causal cognition	I: Ok. D, what time do you think it is when they're eating their breakfast? D: 10 to 12. I: Ok. D: And 12 o' clock. I: Tell me why you think that. D: Because at 12 o' clock, it's breakfast time and the bears like to eat lots of ants and honey and bees and worms and insects.	I: What time of the year do you think it was, M? M: I think it was morning time. I: Do you think so? I wonder was it Summer time? Or was it Winter time? When Santa comes, it's always cold. Was that the time of year in the picture? M: I think it's Summer because there's a little sun in the picture. He said the sun was making him all toasty.
	I: Look at these butterflies. What time of the year do you think it was? H: I think it's Summer. D: 12 o' clock every day. I: Let us hear what H has to say. Why do you think it's Summer? H: The butterflies only come out at summertime.	T, tell me what time of the day do you think it is. M: Night time. I: Why would you say that M? M: Because he's going to bed. T: Because you wait for a minute when it gets dark. M: And then the moon comes out.

	H: He's hibernating. I: That's a great big word, H. What do you mean? H: Because he has to go to sleep. Else he'll die and he has leaves on him to go to sleep and if he doesn't go to sleep, he'll die.	
G: Understanding parallel time	H: Harry Hedgehog gets to the worms first in the morning. I: What time does Harry Hedgehog get to the worms in the morning? D: 10 o' clock H: No, 3 o' clock because bears come out at 7 o' clock.	M: I think that's his daddy and he likes to watch the sunset and I like to watch the sunset with my daddy.
H: Awareness and use of anachronies in time: Analepsis	H: He'll get drownded. D: He wouldn't get drownded. His mam and dad would get cross with him.	M: And when he turns off the light it gets dark and he gets scared
Prolepsis	D: Because he ran away from his mam and dad and never stopped. His mam and dad knowed the bees would come after him again.	I: Look, there's the beehive. I had one of those in my garden last year. M: Did you get stinged? I: No, I didn't. I was very careful. T: They would have chased you around the garden.
	I: Before we turn the page, what do you think happened *before* he jumped in? D: Bees were flying after him because he took the honey.	I: So what did the bees do? T: They had to squeeze out more honey. M: They had to run away and find more flowers and make more honey.
Ellipsis	**No examples**	
I: Ability to engage in temporal updating	**No examples**	

8.2: Interviews with Third Class children

As above, excerpts from both interviews deemed pertinent for this study were extrapolated from the full transcript and presented side-by-side to facilitate the identification of any related convergences and divergences in children's responses. These are presented in Table 30 below.

Table 30: Categorisation of excerpts from third class transcripts - cognitive-developmental influences

Category of temporal cognition	Responses School A	Responses School B
A: Emerging nature and production of temporal terms	I: C, when were you 8? C: April 6th. I: How long ago is that now? C: I don't know.	I: When did her mum first hear the family legend of the Groves blacksmith, J? J: When she was small.
	He was silhouetted against the half-light that comes just before daybreak. I: So, what time of the day is it? D: Morning kinda, no daytime, daylight. I: When is daybreak? D: When day is breaking. C: Probably around half 5.	
	D: I think it is probably in the morning time. Daybreak means the sun has gone in for the night and it's not coming back out again. The daylight comes ... it comes out at 6 o'clock.	
	I: Where did the name "Groves" come from? C: It's her mom's and grandpa's family name and all the people's names in their family.	
B: The production of conventional temporal terms	I: How long does it take to catch a fish? C: 5 minutes, D: 2 minutes.	I: So, what time of the year do you think it is? C: Winter? J: Spring?
	I: How long do you think that they stayed at Grandpa's house, D? D: 2 months.	I: How long ago did Grovesmed help the blacksmith? J: A few centuries. I: How many would that be? J: 5 or 6 hundred.
	I: But was he related to Maria? C: Yeah, her great, great Grandpa. It was her Grandpa's great, great Grandpa.	I: What time did Maria first hear the horse, J? J: Dawn. I: Yes, just before dawn, it said in the picture. What does that word "Dawn" mean? J: Morning?
		I: So, what time was it? J: Christmas time.
		I: J, when did Maria go fishing with Grandpa? J: 2 weeks later.
		I: When did Grandpa begin to feel better, C? C: 2 weeks later. I: Could it have been straight away? C: I dunno.
C: Sequential understanding, temporal order and chronology	C: I think that they stayed there until 1980 … 1910 because they died in 1990 and they stayed there and as the time went past until Maria was born then she grew up and she was a grown up and she saw this grave and she saw the moss and Groves.	C: I get my homework done first, then I get something to eat, then I play with my friends, then I get my dinner, then I have to go to band practice. J: I go to Soccer on Friday, soccer on Saturday and I play rugby on Sunday.

	D: I went out playing soccer, waiting for my friend to come out as he had to do his homework and get dressed and I was waiting probably waiting half an hour and then we went in to play the X-box, then we had to go to X-tra vision.	I: When did the horse come back again, C? C: The second night.
	C: Yesterday, when I came home from school I went down to my house and dropped off my school bag and I asked my father for money and then I went down to the pool hall and played pool and then we all got to go to soccer. When I came back up I looked at the clock. It was half 5 and soccer was still going on. I did my homework and went back out again with my friend and we went all around the place.	J: We play in the trees. C: They get caught in the trees sometimes.
Collaborative sequencing	I: D, what time of the night is it? D: 12 probably. Because the moon is out. I: What do you think, C? C: I think it is just going on 10 o'clock. Because it is not going on 12 o'clock because every time at 10 o'clock or 9 or 8 it goes that dark. D: It goes dark at 5 o'clock, probably half 4. C: It goes very, very dark. D: Because it is going up to Christmas.	I: Could you tell me what time of night it is? J: Night, 8 o' clock. C: 5 o' clock. J: You keep saying 5 o' clock. I: Why would you say that? J: It might be dawn. J: Maybe it's close to dawn.
D: The cognition of temporal distance in the past and temporal location	I: So why would it be covered with moss, D? D: Because it is probably very, very old.	I: How much time has gone by? J: Two weeks.
	I: C, what time of the year did Maria visit Grandpa Groves? C: It was 1990. I: Ok, 1990 you think that is the date. Now why would you say that C? C: Because it was a long, long time ago. D: I don't think it was 1990, I think she saw him in 2000.	I: How long do you think Maria was in the village that day, J? J: A long time. I: How long exactly? J: A few hours. I: How about you, C? C: An hour.
	I: What time of the year do you think it was when Maria visited? C: Autumn. D: No, winter because he is sick. C: It was very, very cold and look at the picture ... and the horse is very, very cold. D: Jumper and a big long pants and at the start when the horses hair keeps growing.	
	I: D, how old do you think Grandpa was? D: In his 80's. I: Why would you say that? D: Because when you are in your 80's, you look old ... my aunt is home from America and she is in her 80's. C: I think he is 77 because that Grandpa is pure small and very, very old and if you looked at him you would think he is 77.	

	I: Do you remember C, when Maria went into the village? How long was she there? C: She was in there for about 2 hours.	
E: The relationship between autobiographical memory and temporal understanding	I: Grandpa said to Maria "the horse, you've seen him, the blacksmith, it's time." What did he mean by that, D? D: It's time ... if you are young and you have a teddy and you are getting old, it's time to throw it away, because you are growing up and you can't keep the teddy all your life because you would be too old and then if you tell people that you have a teddy, they will slag you as you are too old to have a teddy bear.	
F:The relationship between temporal and causal cognition	I: What time did the dawn break? C: Probably around half 5.	I: So, what time of the year do you think it is? J? J: No response. I: What did she wear at night when she got up to see the horse? J: Christmas. 'Cos she wore a jumper.
	I: What time did Maria first hear the horse? What time of the night was it? C: 10 o'clock. I: Why would you say that? C: Because it was just going pure, pure dark and she heard a horse and she went down.	I: So, what time of the year did Maria visit Grandpa Groves? C: Winter? J: Spring? I: Why would you say that? C: Because she was off on her holidays and she didn't have to go to school.
		I: How long do you think she spent at Grandpa's house, J? J: A few weeks, 'cos it said "two weeks later, they went fishing" in the story.
		I: C, how old do you think Grandpa was? C: 75. I: Why do you say that? C: 'Cos he looked really old in the picture.
		I: There was a word on the grave? Who were they? J: Her family. I: Yes, what was the word we used in the story? C: Her family background. I: A descendant of them. Did you ever hear that word before, C? I wonder what does it mean? C: That she descended from them.
G: Understanding parallel time	He's favouring one leg, I thought. That horse is lame. D: That's what I had to do. I hurt my leg at soccer and they put something on over my leg. I: Well then, tell me why would you think that the horse would have had one weaker foot print? C: Probably he is weak because he hurt his knee or something.	I: When did her mum first hear the family legend of the Groves blacksmith, J? J: When she was small. I: Yes, but she said she wasn't really listening to it. Why? J: Because she was more interested in her presents.

H: Awareness and use of anachronies in time: Analepsis	I: Why wouldn't he be hungry? D: Because he is sick. I: He is very sick. D: He fainted in the shop today.	I: When did her mum first hear the family legend of the Groves blacksmith, J? J: When she was small.
	D: She said "go back and tell your master that my Grandpa is not ready to go to heaven yet and if he is ready you have to take me with me".	
Prolepsis		I: What did Grandpa mean when he said "The blacksmith, you've seen him. It's time." C: It's time for him to go into the next life and die.
		I: So what does "a safe passage to the next life" mean, C? C: He'd go on his horse. I: Yes. J, what do you think? J: No reply. C: He'd be safe when he went up to Heaven.
		I: C, What does he mean by "It isn't your time yet"? C: Die.
Ellipsis		I: So, what's happening here in the story? C: He caught the Salmon of Knowledge
I: Ability to engage in temporal updating	I: What time do you come to school, D? D: Probably quarter to 9. 10 past 5. I: What time does school start for you? D: 10 past 5. I: In the morning? D: No, 9 o'clock.	I: C, how old do you think Grandpa was? C: 75. I: Why do you say that? C: 'Cos he looked really old in the picture.
	I: D, do you remember we saw a picture of Maria fishing with her granddad. What time of the year was that, do you think? D: 1989. C: I think it was 2011. I: Yes, now look at the picture again. What time of the year do you think it is from the picture? D: I think that's Summer. I: Why would you say that? D: You can see a shadow on the water.	I: What did she mean by that: "I felt the strength of the link with all my ancestors through this horse"? Who would your ancestors be? C: They were born before me. I: Can you name one person in your family who was born before you. C: My mam and dad. That was her ancestor's horse. He was called Groves.
	I: Could you tell me what time of night it is? J: Night, 8 o' clock C: 5 o' clock. J: You keep saying 5 o' clock. I: Why would you say that? J: It might be dawn. J: Maybe it's close to dawn.	I: J, what did we say an "ancestor" is? J: Someone who was born before you.

8.3: Interviews with sixth class children

The excerpts selected for consideration are categorised according to the aspect of temporal cognition they reflect. These are presented in Table 31 below.

Table 31: Categorisation of excerpts from sixth class transcripts - cognitive-developmental influences

Category of temporal cognition	Responses School A	Responses School B
A: Emerging nature and production of temporal terms	I: What do you think a time print is, C? C: … no response. I: What do you think a time print is, N? N: I don't know.	I: B, how long do you think he was actually in there? B: About 25 minutes, half an hour, maybe. A: And he probably thought it was longer. I: Why would you think that, A? A: Just 'cos he was looking at his past and his present and future and he probably thought it was like a long time and it was actually a short time.
B: The production of conventional temporal terms	I: She could read time. If you said to me "N, I can read time", what would you mean by that? N: If you said to me you can read time, I would mean like 1o'clock, 2 o'clock. I: Yeah. N: Like that kinda way.	I: A, what would you do on a typical day, now take yesterday or today, for example? A: I get up around 8, go down and have my breakfast, get dressed, then we get into the car and we drive to school I: How long does that take you? A: 3 minutes
	I: So what could she see, what could she tell about him when looking at the ball? N: About when he was 2 and got sick all over his auntie and when he was 20 with his hands on his head.	I: So, could you put an age on her? A: Maybe 72. B: 100.
	I: How long do you think it would take him normally to get home from school? C: 10 minutes. I: Why would you say that? C: 'Cos his mam wasn't worrying and it's probably a long way for him.	
C: Sequential understanding, temporal order and chronology	N: He came to a dead end because he saw a shop, well what he thought it was a shop and then he went in and the door disappeared (5 elements). I: And what happened, C after that? C: He went into an alley or something and then he looked for the door to go out and he went over to her and she took his hand and she put it on the ball (5 elements).	A: And then we come in and we normally have maths and stuff first. And at 20 to 1, we have break or small lunch and then we come back in and do some more work and it would be 10 past 12, so we go out for big break. And on Tuesdays and Thursday, the girls go to the field and on Mondays, Wednesdays and Fridays we stay down in the yard and so, today I am going up to the field at big break. And then we might come in and do our play again after lunch and we might do art or something and we go home at 3. I go home and have my dinner and homework and then do anything after that. (17 elements)

		B: Yeah, it goes so fast. I get up and have my breakfast and go into school. In the morning, we would be doing maths and then we go onto Irish and then it is small break and I have my lunch and then we usually finish off our maths and then go onto our English homework and then big break. I go to the field on big break and then we start doing work or something fun at the end of the day and then I go home. I have training. (17 elements.
Collaborative sequencing	N: He probably stood up for himself and actually took action. C: Yeah, he was probably in a dream the whole time, trying to tell him what to do.	A: The door disappeared and he turned around and there as a woman there who said "I have been waiting for you" and he got a fright as he thought he was going into a shop. I: Ok and anything else about it, B? B: He saw a woman all dressed and she kept on saying "I am a mind reader" and he said he only went in there by accident.
		B: When he went down the lane, there was a door there with fainted letters and he didn't know what it was. But he knew that if he went in there he could get away from the 3 boys. A: He was running from something and he didn't know what it was, he couldn't run no matter how hard he tried to run, he couldn't. It was scary.
D: The cognition of temporal distance in the past and temporal location	I: Tell me how long you thing he was inside the house? N: About 15 minutes. I: Would you agree with that C? C: Yeah. I: Why would you say that? N: Because she was probably changing every subject every 5 minutes. I: Ok, so is that a long time? C: No, not really.	I: And A, how long was he preparing to stay in that building, in what he thought was a shop? A: Just for a few minutes, until he thought that they were gone. I: I wonder how long would they have actually stayed? How long would they have waited for him? B: They probably waited for maybe 20 minutes until they thought that he might come out and they did.
		I: How long does it take you to get to school? B: 3 minutes. It's like 40 seconds and we are up (to school).
E: The relationship between autobiographical memory and temporal understanding	I: She seemed to be searching her mind for a phrase … "like a floppy disc". Do you know what a floppy disc is? It's like a memory stick for your computer. N: Yeah, it's for the old computers. I: Exactly, did you ever use one? N: No, I was up in Kildare yesterday and seen all the old computers.	I: And how would you find time then if you found you were a bit nervous about something? Can you think of an example of when you might feel that way? A: The dentist. I: Yeah, good example. So if you were waiting for the dentist, how would time seem to you? A: Long B: It's horrible when you are on an aeroplane.

		I: Yeah, tell me about that B. B: Or you are waiting for presents coming up to Christmas. I: When you are waiting for something to happen, time can do strange things. What does it do? B: It can drag itself out sometimes and then it can be really short like when you are in bed. I: Ok, give me another example of when time seems to fly by. A: When you are having fun. I was at a party and it goes by really quickly, whereas if you were at something really sad or something it goes really slowly. I: Exactly. B: Like mass.
	I: Ok and is there any time that it seems longer and other times it seems shorter? N and C: Yeah. I: What's that about, tell me when it might be longer. N: You could be talking to people and walking slower. N: And on your own, you can just walk past them.	
F: The relationship between temporal and causal cognition	I: And why was she doing that to him? Was she being mean to him? N: No, she was trying to be good to him, because she was trying to make sure to have a good life. I: Ok and what would that involve, N? What was she trying to do for him? N: Help him out. I: How? N: Tell him what he … are you going to do with his life? I: So what were his choices? N: Either stand up for yourself or be a chicken all your life?	I: So at the end of the story, is it a positive or negative ending, A? A: Positive, because it's saying that he has a good future and he stood up to the boys and his bad dreams are gone. A: And he is happy.
	I: Now, can you tell me what did she mean when she said "I am blowing away your future"? N: She would probably tell him but then he would probably forget about it when she blows it away so he won't know later.	I: So, she said something "I am blowing your future away". What do you think she meant? B: Changing his future. Like she knows what is going to happen to him if he doesn't change, so she is trying to get rid of what is going to happen to him and trying to change that.
		I: Why couldn't he leave, why couldn't he just get up and go? B: As the door disappeared and it would only come back when it needed to.
G: Understanding parallel time	I: Ok, so at the very end of the story, what do you thing happened? C: He probably was in a dream.	A: It said that he did it in his dream, so he probably did it in real life as well, because it stopped him from the bad dream. **Also Ellipsis**

	I: And I think that he mightn't have been concentrating on what the teacher was saying as when she called him, he got a fright, didn't he? Does that ever happen to you in class, C? C: No. I: Maybe your teacher would be saying something and you are thinking about something else. Does that ever happen? C: Yeah, sometimes I would be just thinking of Justin Bieber! I: Ok, so what is that called? C: Daydreaming. N: No, when she (teacher) is doing Irish.	
H: Awareness and use of anachronies in time: Analepsis	I: Why do you think she was looking into his past? N: Because say if he was getting bullied or something, where it all started.	I: What do you think B, did he actually stand up to them? B: Yeah. I: Why would you say that? B: Because he knew what he would be like if he didn't change, so he wanted to make it better.
	I: Ok right, and you said something there C, when it started, if she could turn back time, what might she get him to do? C: She might get him to try and remember back.	
Prolepsis	I: And at what point did she say "you can go now, because I am finished"? She showed him a time - what age was he? N: 20 and he stood up for himself and took action and then she stopped and told him that he can go now.	I: Would it be better or worse for his future? A: Better, because it would not be as sad, as he learnt what he had to do and she changed him by showing him what to do.
	I: What did she mean when she said that she was a time seeker and that she could read time? C: Because she could see the future and everything and she could see what was going on in his life.	I: Would it be an advantage to be able to see into the future? B: It would be annoying to you knowing what you were going to get (for Christmas). A: I would want to be there when it actually happened and would like to see it.
Ellipsis	I: What do you think, N? N: That when he stood up for himself and actually took action … pause. He probably stopped them ganging up on him. I: And how did that make him feel? N: Happy.	B: 'Cos he usually runs away from them and in his dream he realises what happens to him. I: Exactly, so how long do you think his dream lasted, A - at the beginning of the story? B: Maybe, a few minutes while he was kinda daydreaming, but he has wanted to get away from them. It's just hard and maybe that's just how it is when they are chasing him.
I: Ability to engage in temporal updating	N: He is probably in 4th class and they are probably in 6th.	I: How old do you think the woman is B? B: She could be really old. I: What makes you think that? B: Because of her appearance and she is a time seeker, so she would be really old.

8.4: Data pertaining to the sociocultural influences on children's temporality

A range of significant sociocultural influences on children's interpretations of time were identified in their conversations. These references have been extrapolated and the six themes that emerged, as outlined in figure 19 above, are presented in the tables below.

Table 32: Categorisation of excerpts from junior infant transcripts - sociocultural influences on children's interpretations of time

Theme	Responses School A	Responses School B
1. The significance of family	D: My baby brother's name is Jake and he's only 1 and a half.	I: T, what time of the day do you think it is? T: 11 and 12. 11 o' clock. I: Why do you say that? T: 'Cos when the grownups leave their houses, 11 and 12.
	H: On my birthday, my fairy godmother forgot to come out to my party. So she came out to my Nana's and she gave me a monster book and she gave me a Transformer Lego.	M: Because at 5 o' clock, I get up and sometimes my dad gets up at thirteen and sometimes I get up at 3 o' clock.
	I: Tell me about Momie Bear in the picture, H. H: She was upset. The crocodile monster. D: And baby bear, his dad caught him.	
2. The significance of nature	H: It's 1 o clock. I: Why would you say it's 1 o' clock, H? H: Because it's bright and it's 1 o' clock? I: Why do you say it's 2 o' clock, D? D: Mmh, because there's some dark there.	M: It was dark only for 15 minutes and then the sun came out.
	I: I wonder what time it is. What's on in the background? D: A light. I: Why do you think that's on? D: Because he's scared of the dark? I: Maybe. What do you think H? H: He's scared of the dark. I'm scared as well.	
3. The significance of school	I: H, tell me why you said it was 1 o' clock in the picture? H: Because, that hand it says 1 o clock (pointing to a chart on the wall of the interview room).	T: I don't like school because I know what the start to with the letters.
	D: Because it was 2 to 4. The small hand is on 2 and the big hand moved all the way up to 4. There was 6 o' clock, it will be 1, 2, 6 (pointing to numbers on the chart in the room).	T: The big huge Friday we are having a show … no, not the other show … the last Friday.

4. The significance of the immediate social environment	D: Because when someone is very lazy, then they have to sleep every day.	
	I: What time of the year to you think it was D? D: 5 to 9. I: Ok, why do you say that? D: Because bears read a story at 5 to 9 and sometimes the mammy bear goes to sleep at 6 to 20 to 10.	
5. The significance of other resources	D: Ahm, because 4 o' clock is where the wolves come out at 4 o' clock and they scare people and I know they're bad because I have a Power Ranger.	
	I: H, what do you do first thing in the morning? H: I wake up and I go downstairs and turn on the TV and turn 666 on and press the second button and press the backwards arrow and turn on 606	
6. Emotions triggered by various times	I: How long do you think they were asleep? D: For hundreds of times. I: Were they? They were asleep all winter, how long do you think that was? D: A hundred. Santa disappeared his sleigh and throwed down presents the chimney.	T: Because you wait for a minute when it gets dark. M: And then the moon comes out. And when he turns off the light it gets dark and he gets scared.
		M: I love being tucked up in bed.
		T: It would be freezing. He can't breathe. M: He has to close his eyes and do this…
		M: They're all in bed. He has a red bed and he has a blue bed. They're all curling 'cos there's snow coming into them.
		I: When does Christmas come? T: When it snows and we want to throw snowballs.

Table 33: Categorisation of excerpts from third class transcripts - sociocultural influences on children's interpretations of time

Themes	Responses School A	Responses School B
1. The significance of family	C: He is going home because it is probably cold and he probably wants to go back and eat something and drink some water and go back to his family.	I: Can you name one person in your family who was born before you? C: My mam and dad. That was her ancestor's horse. He was called Groves.
2. The significance of nature	C: Because it is not going on 12 o'clock because every time at 10 o'clock or 9 or 8 it goes that dark. D: It goes dark at 5 o'clock, probably half 4.	J: After school, we play in the trees.

	C: It goes very, very dark. D: Yeah, because it is going up to Christmas.	
	I: Can you tell me about the horse? What kind of horse was it? C: He is a medium. D: He is the size of a wild horse.	
	I: What time would it be roughly in the story? C: Probably around half 5. D: I think it is probably in the morning time. Daybreak means the sun has gone in for the night and it's not coming back out again. The daylight comes ... it comes out at 6 o'clock.	
3. The significance of school		C: I get my homework done first, then I get something to eat, then I play with my friends, then I get my dinner, then I have to go to band practice.
4. The significance of the immediate social environment		I: J, how would she know how long the hoof print was there? C: I know, my granddad has a farm.
5. The significance of other resources	I: What time do you actually come here to the school, D? D: Quarter to and wait in the line. I: So what time do you get up? D: 6 o'clock. Because I watch telly.	C: I have a lot of free time. I just spend most of it upstairs in my room listening to music.
	D: I went out playing soccer waiting for my friend to come out as he had to do his homework and get dressed and I was waiting probably waiting half an hour and then we went in to play the x-box, then we had to go to X-tra vision.	
6. Emotions triggered by various times	Story: "Misery" was written all over my face. I: C, do you ever have misery written all over your face? C: No. I: How about you, D? D: Going to bed.	I: C, did you ever have "misery" written all over your face? C: Yeah. When it's raining and I want to play with my friends in the trees.
	D: Pale. "White as a ghost", that's what people call it.	
	D: It's time ... if you are young and you have a teddy and you are getting old, it's time to throw it away, because you are growing up and you can't keep the teddy all your life because you would be too old and then if you tell people that you have a teddy, they will slag you as you are too old to have a teddy bear.	

Table 34: Categorisation of excerpts from sixth class transcripts - sociocultural influences on children's interpretations of time

Themes	Responses School A	Responses School B
1.The significance of family	C: I goes up to G… and on Saturdays, I goes out to B… and then I go back to my place for the night.	I: How old do you think the woman is B? B: She could be really old. A: Maybe 72. B: 100? I was thinking that it's hard to tell because she doesn't have a normal lifestyle.
		A: I get up around 8, go down and have my breakfast, get dressed, then we get into the car and we drive to school.
2. The significance of nature		A: … today I am going up to the field at big break. B: … I go to the field on big break
3.The significance of school	I: But you said to me that he is only in 4th class now, so what age would he be in 4th class? N: Probably about 9.	
	C: Sometimes I would be just thinking of Justin Bieber! I: Ok, so what is that called? C: Daydreaming. N: Like when she (the class teacher) is doing Irish.	A: And then we come in and we normally have maths and stuff first. And at 20 to 1, we have break or small lunch and then we come back in and do some more work and it would be 10 past 12, so we go out for big break. And on Tuesdays and Thursday, the girls go to the field and on Mondays, Wednesdays and Fridays we stay down in the yard and so, today I am going up to the field at big break. And then we might come in and do our play again after lunch and we might do art or something and we go home at 3. I go home and have my dinner and homework and then do anything after that.
	I: How long do ye get for big break? C: About 40 minutes and then small break, we would only get half an hour. I: Right, and when you go home from school, you finish at what time? C: We finish at 20 to 3. I: And what time do ye start in the morning? C: 5 to 9.	
	C: I go to homework club and that ends at 4 o'clock, but when I go home I eat my dinner. I: And where's the homework club on, C? C: Do you know where my classroom is? I: Oh, it's on here in the school	
	N: Go up to LIT as I'm doing a programme over there and then go home, do my homework, go out play soccer and then come in.	
4.The significance of the immediate social environment	I: So, C what would you call her? C: A fortune teller. N: Yeah, because my mother went to a fortune teller and told my mother that she was going to have another baby boy and she had a baby.	

5.The significance of other resources	I: Did you ever go away on holidays, C? C: Yeah. I: And where did you go? C: Half way around the world, I would think. I: And when was that? C: I went to Turkey, I went to Paris. I went to Spain. I: Right, let's talk about Paris. Now, French people in Paris - what was their accent like? C: Weird.	B: Like being on an airplane.
	I: Do you know what a floppy disc is? It's like a memory stick for your computer. N: Yeah, it's for the old computers. I: Exactly, did you ever use one? N: No, I was up in Kildare yesterday and seen all the old computers.	
6.Emotions triggered by various times	N: Then one day that the 3 boys were chasing him and he came to what he thought it was a shop so he opened the door and there was just darkness and the door disappeared.	I: And he didn't find it comfortable, do you remember? B:You can get nervous, get anxious yourself, get uncomfortable. I: Can you think of an example of when you might feel that way? A: The dentist. B: It's horrible when you are on an airplane.
	I: Ok and do you think that was a good idea to stand up for yourself? N: Yeah, C: Yeah. I: You think so? N: Because then they won't think that you are scared of them and then they would probably move on to someone else then.	I: Would you like to see into your future, A? A: I don't know, some bits I would. B: No. I: Why not? B: It would spoil it… it would be annoying to you knowing what you were going to get (for Christmas). A: I would want to be there when it actually happened and would like to see it.

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