Where do beginner readers read in the English, mainstream primary school and where could they read?

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Preface

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text.

It is not substantially the same as any that I have submitted, or, is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. I further state that no substantial part of my dissertation has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text.

It does not exceed the prescribed word limit.

Contents

Abstract

This thesis explores design for the beginner reader in Year One by evaluating existing spaces in the English primary school and imagining new ones. Three significant gaps identified in the literature of reading, the teaching of reading and school design are addressed: the impact of reading pedagogies, practices and routines on spatial arrangements for beginner readers inside and beyond the classroom; a theoretical understanding of the physical, bodily and sensory experience of the beginner reader; and the design of reading spaces by teaching staff.

The study uses a design-oriented research methodology and framework proposed by Fällman. A designed artefact is a required outcome of the research: in this case, a child-sized, semi-enclosed book corner known as a nook.

The research was organized in three phases. First, an initial design for the nook was created, based on multi-disciplinary, theoretical research about reading, school design and architecture. Secondly, empirical research using observation, pupil-led tours and interviews was undertaken in seven primary schools to determine the types of spaces where readers read: spaces that were often unsuitable for their needs. Thirdly, as a response to the findings of phases one and two, the nook was reconceived to offer a practical solution to poorly-designed furniture for reading in schools and to provoke further research about the ideal qualities of spaces for the beginner reader.

The study demonstrates how the experience of the individual reader is affected by choices made about the national curriculum; by the size of schools and the spaces within them where readers can learn; by the design of classrooms by teachers; and by regulatory standards for teaching and non-teaching spaces. In developing a methodology that can stimulate and facilitate communication between architects, educators, policy-makers and readers, this thesis offers a valuable contribution to the ongoing challenge of improving school design for practitioners and pupils.

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List of figures and tables

List of abbreviations and acronyms

AHRC   Arts and Humanities Research Council

ASHA   American Speech-Language-Hearing Association

BB   Building Bulletin

BREEAM   Building Research Establishment Environmental Assessment Method

BSF   Building Schools for the Future

CABE   The Commission for Architecture and the Built Environment

CAD   Computer-aided design

DBS   Disclosure and Barring Service

DfE   Department for Education

EFA   Education Funding Agency

EFSA   Education Funding and Skills Agency (since 2017)

eFSM   Eligibility for Free School Meals

EYFS   Early Years Foundation Stage

HCI   Human Computer Interaction

HVAC   Heating, ventilation and air-conditioning

KS1   Key stage 1

KS2   Key stage 2

NQT   Newly qualified teacher

QTS   Qualified teacher status

PTA   Parent teacher association

SCABAL   Studio Cullinan and Buck Architects Ltd.

SENCo   Special Needs Co-ordinator

SEND   Special Educational Needs and Disability

SLT   Senior leadership team

The nook

Chapter One: Introduction

The curriculum, the rule book, the head teacher's policy, the staff hierarchy, the punishment regime and other socially prescribed matters may appear to exert a far stronger influence on the way a school works, but the spatial setting is nevertheless ever present and never neutral, for it always makes some patterns of use easier and others more difficult. We become blind to this once habituated in the use of a building, for it seems just to be there, and we have to make an imaginative leap to envisage how it might be otherwise.

<div align="right">Blundell-Jones, 2014, p. 13</div>

Whatever the type of school, a group of people comes together to design a structure based upon ideas about what the teacher or learner should be doing when they interact. It is these ideas that create classrooms, situate corridors and locate specialist rooms, common spaces and surrounding areas in a particular way.

<div align="right">Burke & Grosvenor, 2008, pp. 10-11</div>

1.1 Rationale

This thesis is about the sites and locations where beginner readers read in primary schools and about designing an alternative space where they could read in school. It explores the interface between the beginner reader and the school building and connects the macrocosm of school procurement, building regulations and the national curriculum with the microcosm of the needs of the individual reader to demonstrate how the spaces where readers read are shaped by policy at a national level.

The importance of the relationship between the physical body of the beginner reader and the school environment in which they read prompted the design of a reading space, known as the nook, as an integral element of this study. The investigation of this relationship

created new knowledge about the practical aspects of reading procedures, practices and the complex factors involved in improving reading spaces for the benefit of beginner readers. The use of a conceptual research model from the field of Human-Computer Interaction (HCI) highlighted the interdependence between the physical, sensory requirements of the beginner reader and their surroundings. Literacy education in schools has commonly accorded little importance to the bodily and emotional needs of the novice reader but, as Mayall, Bendelow, Barker, Storey and Veltman remind us, "[c]hildren bring their bodies and emotions to school every day not just their minds" (1996, p. 1). In this study, the body and emotions of the beginner reader are carefully considered through the design of a nook.

Edgerton, McKechnie and McEwen argue that "in assessing the impact of education, researchers have tended to focus on what is taught or how it is delivered. Limited attention has been paid to *where* pupils learn" (2011, p. 34, emphasis added). By improving knowledge about where beginner readers read in schools and about the qualities of these spaces, this study may assist policy-makers, architects, building contractors, educators and researchers to develop physical sites and locations that offer an optimum level of support for the beginner reader.

1.2 Research questions

Two primary research questions are addressed by this thesis: the first is evaluative and empirical; the second propositional and explorative. Both seek qualitative responses.

Research question 1: Where do beginner readers read in the contemporary English, mainstream primary school?

The first research question identifies a gap in knowledge about the types of spaces where beginner readers read in school and the qualities of those spaces. In answering this question, I focus on a single cohort of readers in Year One.

Research question 2: Where could beginner readers read in the contemporary English, mainstream primary school?

The second research question is addressed through the conceptual and physical design of a propositional artefact, a reading nook, and places an emphasis on the complex interaction between the body of the reader and the environment in which they read.

1.3 Locating myself as a researcher

In the decade before I began my doctoral studies, I worked as a class teacher in four primary schools and, for the last three years of that period, as a whole-school reading manager and Reading Recovery teacher. Reading Recovery teachers work with Year One children and provide an individually tailored, 'catch-up' programme of reading and writing. They are not class-based but withdraw children one at a time from their classrooms for these daily lessons for a period of between twelve and twenty weeks.

In my second year as a Reading Recovery teacher, plans were put into place to transform the school from one-form to two-form entry and temporary classroom accommodation was installed in the playground for an additional Year One class. During the following year, proposals were made to further increase the number of children enrolled from two- to three-form entry, necessitating a major refurbishment or rebuild. An architectural practice was engaged and a three-dimensional model of a new building appeared in the foyer of the school. Parents were invited to briefing meetings about the new building. There was no consultation, however, with teaching staff beyond the Senior Leadership Team (SLT) or with children about any aspect of the design of the new building. One member of staff, the Special Educational Needs Co-ordinator (SENCo), raised concerns about the absence of small group rooms for counselling and extra tuition but despite her misgivings, her views were not supported by the head teacher. A local historian mounted a campaign to save the building and initially won the approval of the local council, who had voted to demolish it, reversing their decision but this outcome was again reversed following a council meeting outside

which parents and children were mobilized by the head teacher, protesting with banners asking for "a brand new school". Within two years, the old building had been demolished and new one constructed.

Two aspects of this experience in particular influenced this doctoral research study. The first concerned the availability of a room in which I could teach reading and writing. I was fortunate to have my own room in which to teach in the old school building, even though it had no windows and was extremely small, because many other teaching activities took place in corridors or in one of the school's three halls. However, although my room had two doors, it was essentially a through-room between a busy stairwell and the office of two members of the SLT that they often used for meetings. As I taught, I became aware of how much the interruptions of staff going to and fro through my room into the office disturbed the flow of the lesson for the children. Not only were readers often interrupted by someone having a loud conversation as they walked through the Reading Recovery room to the office but I also could not fail to notice how self-conscious they appeared to be when members of staff stopped to ask them a question or look at the book they were reading from. Even people passively listening as they walked through seemed to have an impact on the reader's confidence. This led me to investigate the significance of quiet, protected spaces for readers who are learning to read.

Secondly, I became aware during the planning stage for the new school building that although the rhetoric of 'newness' had captured the school community's excitement and support for a new building, there was very little discussion or understanding of the implications of the design of the building itself beyond that newness. Emphasis was also placed on the speed of delivery and the attractiveness of design features such as a rooftop playground (albeit overlooking one of the most highly polluted roads in London) rather than an assessment of how many well-constructed teaching areas could be accommodated and how these would support learning.

Prior to my career as a teacher, I studied English and French literature, music and children's literature, the latter while making features and arts programmes for BBC Radio Four and

BBC World Service. As a radio programme-maker, I was trained to listen carefully for meaning, for extraneous noise and for intelligibility and these aspects of my training have undoubtedly promoted a sensitivity to sounds, voices and environmental noise. As a teacher in one of the most economically-deprived boroughs in the country, I noticed how many children's hearing had been compromised by endemic ear infections that occurred within a cycle of infection that was not helped by the damp conditions in much of the local housing. Having grown up with a sibling who has Down syndrome and who became deaf at an early age, I recognize the benefits of design that promotes integration and that allows every child to benefit from excellent acoustics and spatial arrangements. Few of the children attending the school where I taught Reading Recovery had a quiet place of their own to read at home and many received little assistance with reading from family members, many of whom were not fluent readers themselves. This placed more of an emphasis on the suitability of the school environment as a place where beginner readers could learn to read, either alone or with the support of peers and adults.

This study also reflects my desire to bring positive change to the children who are currently in primary education and to promote equality of opportunity for all children, no matter where they live or go to school.

1.4 The research approach

Design research, as carried out in this study, demands the integration of creative ideas with research knowledge and practical considerations. A conceptual model or framework was needed to shape the dynamic, iterative, messy process of design. In this case, a triangular model by Fällman (2008) was repurposed from the field of HCI and translated from a digital to an analogue context. Fällman's 2008 model consists of three elements, each representing one aspect of design research. The value of the model to this study was the delineation of these three features of design research: design practice ("what is real"), design exploration ("what is possible") and design studies ("what is true") (Fällman, 2008, p. 13) and the exclusion of one of these elements at any one time while the model was operational. This

allowed the researcher to manage two rather than all three of the elements so that particular concerns, such as budgetary constraints, could initially be put aside when exploring the theoretical and imaginative elements of the research. Each of the elements of the triangle and its use are described in further detail in Chapter Three.

Underpinning Fällman's model and my own theoretical perspective is a phenomenological approach to research that draws upon Merleau-Ponty's phenomenology of perception and the ways in which spaces are shaped by the body and, conversely, the body by those spaces. The phenomenological movement is outlined in brief in Chapter Two to contextualize the significance of the body-subject-world in this study.

In this thesis, I suggest a new relationship between design and education through design research. This is essential because the spaces where children learn to read are rarely appraised with a critical eye, or in relation to the pedagogies that are practised therein. Design brings "experiments and improvisations as imaginative interventions nourished by observational engagements in the world" (Ingold, 2015, p. 6) and "ways of joining *with* people in moving forward in their lives" (ibid. original emphasis). If educational buildings are to improve provision for their inhabitants, it is desirable that these elements of design are present. A notable example of using design research to reinvigorate a field of study can be seen in the creation of the new discipline of Design Anthropology (Gunn, Otto, & Smith, 2013; Ingold, 2015), and I draw on this precedent in proposing a speculative understanding of where beginner readers could read, as well as an analytical evaluation of where they do read.

Children in Year One of their primary education in England were chosen as a cohort for this study because this is a significant stage in their educational experience that is marked by a particular set of challenges during the school year. Firstly, this cohort is at the start of their first year of formal education in reading and writing as prescribed by the national curriculum for key stage 1; secondly, children in this cohort must take a statutory phonics screening test with a pass/fail outcome by the end of the school year; and thirdly, they are beginning to learn about other areas of the curriculum through the medium of written texts. James,

Jenks and Prout (1998) advise researchers to think carefully when selecting a particular cohort of children to work with, warning them against choosing an age group:

> simply because they feel that the children will be 'old enough' to engage effectively with the researcher's project, rather than because at that particular age in that particular society, children are sharing a particular social, rather than simply developmental, experience. (p. 174)

In the case of this project, the chosen cohort is situated within a specific social and cultural experience that is very different from their peers in much of the rest of Europe. While the latter inhabit the less formal setting of the kindergarten, children aged five and six in England (and other countries of the UK) are grouped at tables that reflect their teacher's appraisal of their ability in reading, writing and maths. Their written work is marked in detail by their teacher with targets given and comments made *in writing* to each child. These particularities of the English model of education, determined by the government and promoted through statutory assessment and inspection, limit the scope of specific elements of this research to England rather than to other parts of the UK, where different models have been adopted. The teaching of reading in Year One is explored at the beginning of Chapter Two to contextualize the current pedagogies with which the nook must engage to propose beneficial outcomes for readers. Although the thesis does not champion the current model of schooling through assessment, this study is sited within the existing pedagogical paradigm in England to seek ways of enhancing the reading experience of children who are currently in school.

This study addresses the relationship between pedagogy and the uses of space because teachers design spaces for reading under the influence of pedagogical goals, even when they are not necessarily aware that they are doing so. In a broader context, it is also important to note that teachers make these design choices working within buildings that are designed with pedagogical and political goals in mind. The body responsible for the procurement and delivery of new and refurbished primary schools in England, the Education Funding and Skills Agency (EFSA), makes design choices about the size and features of

schools, acting as the single "strong, expert, intelligent client" (James, 2011, p. 58) and delivering batches of standardized, often modular, buildings that the Department for Education (DfE) claim will be "faster, cheaper" and "fit for purpose" (DfE, EFA, & Lord Nash, 2015) since they are no longer "designed from scratch with significant negative consequences" (James, 2011, p. 5). In assuming the role of the client in this process, the implicit pedagogical and political position taken by the EFSA governs the approval of the spaces designed for learning. Since the EFSA represents the voice of both client and delivery agency, discussion about design of learning spaces is minimized, resulting in a limited consultation with the end users of school buildings. This represents a "philosophical shift in approach" (ibid. p. 6) from the previous administration's practice of commissioning and refurbishing new school buildings. The consequences of these changes to the procurement of schools are: a reduction of investment in design; the exclusion of many experienced architects from the process; and the prioritization of cost reduction, valuing only the pedagogical considerations given weight by the DfE. A specific example of this is the reduction in area of new school buildings, which will have a direct impact upon many beginner readers, who require protected, secluded spaces when they are learning to read.

An acknowledgment of the complexity of the ways in which the learning environment is shaped by pedagogies and political influences informed my decision to design a small space for readers within the school rather than attempting to design a whole school building. It also guided the recommendations that are made at the conclusion of the study.

The word *reading* has been politicized and contested within the context of education in the English-speaking world in recent decades. I use *reading* rather than *literacy* and *literacies* in this thesis except when citing other authors, when I have respected their choice of terminology.

The term *beginner reader* is used in this thesis to describe the entire Year One cohort of children. Some children will enter Year One as fluent readers while others will acquire fluency during the school year. However, at the age of only five or six years old and at the beginning of their reading lives, most of these children will not have had a wide experience

of texts and may still need support from their surroundings to sustain a reading experience for any length of time.

1.5 Context of the doctoral project

A collaborative doctoral project, in which the doctoral researcher is located within an organization for a substantial part of the doctorate, brings with it particular benefits and constraints and such projects are shaped by the personalities and ambitions of the partners concerned. This doctoral project was funded by the Arts and Humanities Research Council (AHRC) and brought together an academic partner and a commercial partner: respectively, the Faculty of Education, University of Cambridge, and an architectural practice, SCABAL.

The scope of this study was defined by an initial, "Aims and Objectives" section of the (unpublished) funding proposal for the doctoral collaboration, submitted to the AHRC in 2013. Here, the architect and academic research partner proposed that the prospective doctoral researcher might consider elements of "the relationship between design and education that is left unexplored" *beyond* the question of "the relationship between the built environment and standards of achievements recorded through regular examinations". They also required the doctoral candidate to "contribute to knowledge in this cross-disciplinary area [school design] where there is a significant gap in our thinking." This gap was identified by me as a deficit in knowledge about the types of spaces where beginner readers read in schools.

The context of SCABAL's experience and position within the industry directly informed the scope and scale of this study. SCABAL specialize in client design advice for school projects and, as such, could offer significant expertise in their field. Historically, their role as client design adviser has accounted for approximately 70 per cent of their business, while 30 per cent has been taken up with small-scale refurbishments and additions to nurseries, primary and secondary schools and by other non-education projects. No whole-school projects were underway during the research period of this study but in the past, as client design advisers

in the education sector, SCABAL have worked with schools to encapsulate their vision for a new-build school or the refurbishment of their existing premises. SCABAL also represented schools in their engagement with larger architectural practices, who were commissioned to design schools and with the contractors who built them, holding both parties to account for the delivery of their promises and obligations.

SCABAL are a small practice with two business partners, only one of whom, Dominic Cullinan, was involved in the doctoral collaboration. In this thesis, I refer to Cullinan by name but also as 'the architect' and to the employees at SCABAL, including those on short-term contracts and unpaid interns, as 'the design team'.

1.6 Chapter synopsis

Chapter Two: Literature review

The Literature Review draws upon a variety of disparate disciplines and studies that feature a range of theoretical perspectives and finds common ground within them. Although the focus of this chapter is a review of the relevant literature, precedents for the design of the reading nook are also included here.

There are many paradigms of reading and literacy education. I situate my own understanding of what it means to be a reader in relation to the current, dominant model of reading in English primary education. Differences between expert and beginner readers are explored in this thesis using a physical, bodily, sensory perspective that was chosen to inform the design process.

Literature that investigates the qualities of spaces that support concentration and comfort for expert readers is coupled with examples of quiet, alternative, liminal spaces. The implicit, intangible qualities of spatial design that occur through and that are enforced by the management and discipline of children's bodies are also noted to ensure that freedom of movement for children in the nook is considered as a feature of its design.

The final section of the chapter examines school procurement, standards and regulations with an emphasis upon the problems that noise and poor acoustic design may exacerbate for young readers in school.

Chapter Three: Methodology

This chapter situates the conceptual research model by Fällman (2008) that frames this thesis, uniting elements of design practice, studies and exploration. The chapter begins by referencing precedents for the framework in the field of design and then details my understanding of each of the three elements of the framework in relation to this study. Aims, objectives and research questions are set out prior to a description of the three distinct phases of the study: the first with an emphasis on communication between myself and the architect; the second focussing on the empirical aspects of the study in schools and the third providing an account of the realization of the nook as a small scale artefact to be used in further research in schools.

Chapter Four: Findings

The findings build upon theoretical knowledge about reading, literacy education and school design as reported upon in Chapter Two. Key aspects of the nook design from phases one and three are highlighted, with reasons for their selection. The findings from the empirical research in schools can be read as a stand-alone report about where readers in Year One read in school but these findings also contribute to the prototype design of the nook that is presented to conclude the chapter.

Chapter Five: Discussion

Chapter Five explores the reasons why Fällman's framework is well-suited to this study. Elements of the framework that are particularly valuable with respect to the interface between education and school design are discussed regarding each phase of the study, leading to an evaluation of how educational research in general might benefit from a design

research methodology. Obstacles and complications are also acknowledged and the chapter finishes with an argument for the provision of better, more thoughtful design for beginner readers in schools.

Chapter Six: Contribution to theory, conclusions and recommendations

The final chapter begins with a review of the new theory that develops from this study. The research outcomes are then summarized within five categories. The beginner reader in school and the design of spaces where readers currently read in school respond to Research question 1. The relationship between school buildings, standards and individual readers; support (both available and needed) for teaching staff in design for reading and the value of Fällman's framework answer Research question 2. Specific recommendations to improve design for reading are directed towards the following professionals and institutions: academic researchers; architects and designers; policy-makers; teacher training providers; and schools.

Chapter Two: Literature Review

This study identifies the sites and locations where beginner readers read in school. It also proposes a different type of classroom reading space, a nook that is tailored to their needs. In the absence of a body of literature about design for beginner readers, this chapter considers the different requirements from their environments of the expert reader and the novice reader in school.

The Literature Review chapter is organized in four parts. The first, 2.1, is about the teaching of reading in schools and what it means to be a beginner or an expert reader. The phenomenological perspective that underpins this study is introduced in 2.2 and writing by architects who design from this perspective is presented as a first step towards connecting the spaces in which readers read with an understanding of the physical aspects of the activity of reading. In 2.3, the design of a variety of spaces that influenced the nook are evaluated, from beautifully-appointed libraries to children's dens. The final section of this chapter, 2.4., is about school design and pays attention to the regulations and standards that impinge upon the health and welfare of the beginner reader when they read in the school building.

2.1 Reading and the teaching of reading

In this first section of the chapter about readers, pedagogies and paradigms for reading, I argue that research about reading should be framed by the understanding that reading is a human construct. It follows that none of the many, existing paradigms for reading can be regarded as neutral, even when teachers who teach reading are not cognisant of them, and a dominant paradigm of reading in the English education system is identified. I make a case for the evaluation of different paradigms with relevance to the beginner reader and the spaces where they read, acknowledging the physical difficulties and performative pressures of learning to read in the school building. I contrast the experience of reading for the expert

and the beginner reader and show how, for the latter, the circumstances and surroundings may critically affect their ability to read.

2.1.1 The dominant paradigm for reading in the English primary school

Reading is "a human, ideological construct with no correct answers about what it comprises" (Cliff Hodges, 2015, p. xx). As a result, theoretical perspectives about reading and the teaching of reading overlap and collide with little consensus between experts in the field about the value or even the existence of other paradigms. It is therefore not surprising that a centralized and "statist" education system (Keep, 2006, p. 48) might choose to establish a single, dominant paradigm for the teaching of reading. I begin this investigation into design for the beginner reader in school by identifying and contextualising the dominant paradigm within which all beginner readers are taught in state, primary schools in England under a national programme of study, as regulated by the Department for Education (DfE). This will allow me to explore how the beginner reader is viewed within the context of contemporary English primary education before locating my own understanding of what it means to be a reader within a broader paradigmatic context.

Disparities between paradigms for the teaching of reading are both ontological and epistemological. Onto, from the Greek, ὄν, concerns the nature of being or existence, while epistemology, a philosophical term coined in the 19th century by James Ferrier, is "the theory or science of the methods or grounds of knowledge" that "answers the general question, 'What is Knowing and the Known?'" (Ontology, 1971). Viewed in the context of the doctoral research, one might describe the PhD candidate's relationship with ontology as what they believe to be true or real, while their epistemology determines how they choose to proceed with their research in the context of these beliefs. In *Researching and Teaching Reading* (2015), Cliff Hodges gives an account of two opposing paradigms: a cognitive-psychological approach; and reading as a social practice, urging researchers and teaching practitioners to "spend time thinking firstly about how you theorise the nature of what

reading is and, related to that, what you perceive readers and texts actually might be"
(2015, p. 36).

A researcher working within the cognitive-psychological paradigm, as Cliff Hodges explains,
might understand reading ontologically as decoding, or "as a code to be cracked" (ibid.) so
that texts are regarded as "code-like entities" (ibid.). The related epistemology follows that
reading is "a process of decoding and comprehension" (pp. 36-7) and the same researcher
"will be likely to focus on a teacher's selection of age- and stage-appropriate texts and how
readers demonstrate their comprehension" (p. 37). By contrast, someone who understands
reading to be a social practice and "as a way of interacting with texts and the pleasures they
yield via other readers" might view the reading of text as a "process of transaction between
reader and text" which may then lead them to an epistemological exploration of "the
meanings that are created out of the interplay of reader and text" (ibid).

The administration of the teaching of reading in what the government describes as "state"
primary schools (gov.uk, n.d.) throughout England falls within the remit of the "statutory
national curriculum framework" which is "issued by law" (DfE, 2014). Programmes of study
and attainment targets are set out for all subjects, including reading. The statutory guidance
for the National Curriculum in England states that pupils in Year One should be taught to:

> apply phonic knowledge and skills as the route to *decode* words; respond speedily
> with the correct sound to graphemes (letters or groups of letters) for all 40+
> phonemes, including, where applicable, alternative sounds for graphemes; read
> accurately by blending sounds in unfamiliar words containing GPCs that have been
> taught. (DfE, 2013, p. 10)

These statutory requirements for the teaching of "word reading" (ibid.) emphasize phonic
knowledge and skills as the bedrock of the programme. *Reading: the next steps*, published
by the DfE in 2015, asserts that "children learn to read best when they are taught using a
robust programme of systematic synthetic phonics" (p. 9). The execution of this programme
is managed by means of a "phonics screening check" that was introduced with the aim of

improving standards, not only measuring them. As is consistent with this paradigm, the cohort of beginner readers is led through "a staged reading programme which includes texts of increasing complexity before progressing to reading of pre-chosen chapter books issued according to their perceived complexity or, perhaps, their calculated reading age" (Cliff Hodges, 2015, p. 36).

Researchers working within the social paradigm, which may also be understood as socio-cultural, socio-political and/or a combination of the two (Hall, 2002) oppose the cognitive-psychological paradigm or model, which they regard as autonomous (Street, 2000, 2003) or as "literacy as an individual development along a predetermined trajectory" that is "taught as neutral, technical, and de-contextualized" (Roy & Schafer, 2015, p. 528). The cognitive-psychological model may also be understood to be "politically expedient" in that it is "underpinned by a politics of control" that reduces the teaching of reading to "an easily identified set of skills" which then is used to "increase the accountability of teachers in a direct and mechanical way" (Daniels, 1993, p. 59). Moss reveals that pupils who have failed to pass the phonics screening test twice must resit the test for a third time and disputes the efficacy of the method of teaching and testing:

> The policy logic assumes that the phonics curriculum as it stands in English schools is key to every child learning to read successfully; that success at word level decoding can be reliably captured by the measures used in the phonics check; and must have a decisive impact on the end of key stage 2 (KS2) reading tests. All of this despite the fact that the KS2 tests set out to capture different aspects of the reading process from the decoding skills represented in the phonics curriculum, while the validity and reliability of the phonics check itself are unproven. In fact, neither set of test results fully support the proposition that reading success automatically follows from teaching synthetic phonics first and fast. (2016, p. 933)

Moss then demonstrates how teachers are made directly accountable for their pupils' attainment rather than interrogating whether the tests or, indeed, whether the paradigm of literacy education itself should be held to account:

The logic that makes escalating the number of examination resits a plausible strategy, nonetheless, runs something like this. If not all children pass the test it is the teacher's delivery of the phonics curriculum that is at fault. If all teachers simply delivered the curriculum to plan and with fidelity, then everything would be resolved (p. 934).

Burnett and Merchant contend that the binary understanding of "high/low achievers" and of "good/bad schools and teachers" is "a poor basis for a shared language with which to discuss literacies" (2014, p. 47). Cliff Hodges adds to their argument by emphasizing that not only politicians or inspectors but "very often, researchers and teachers" also place an unhelpful emphasis on "test scores and the evidence they provide of progress and attainment rather than the much fuller importance of the reading process within English and beyond" (2015, p. 12). Ellis and Moss go even further, suggesting that the government has actively prevented the research community in England from engaging critically with literacy research and enabling teachers and student teachers to do the same, arguing that the research community should be "genuinely shocked" by this intervention (2014, p. 256). Equally shocking, perhaps, is that schools that fail to carry out the phonics screening check as prescribed may be subject to a "maladministration investigation" (Standards & Testing Agency, 2017) and a "national curriculum assessments helpline" has been set up so that instances of maladministration can be reported (ibid.).

The evidence above suggests that the current dominant paradigm for the teaching of all readers in English mainstream primary schools is consistent with the cognitive-psychological paradigm and that this paradigm is vigorously and consistently enforced in all schools through statutory testing procedures. The current, required teaching method for the teaching of reading adheres to Cliff Hodges' definition of "a code to be cracked" (2015, p. 36). An insistence upon "a process of decoding and comprehension" (DfE, 2015, p. 4) rather than upon the second strand of reading which teachers are also required to promote, "a love of literature" (ibid.) is unmistakable in this extract from the foreword to *Reading: the*

next steps Supporting higher standards in schools by Nick Gibb MP, Minister of State for School Reform:

> As children begin to master decoding, it is vital that they also begin to read with speed and fluency. These are essential skills for becoming a confident, mature reader, and are best developed by instilling in children a love of literature. (ibid.)

Here, Gibb prioritizes skills over meaning: developing a love of literature is regarded as a means to an end, rather than as an end in itself.

2.1.2 Design for reading in schools within the cognitive-psychological paradigm

This study reports on and imagines further possibilities for design for reading in schools, specifically for beginner readers in Year One. Just as reading is a human construct, design for reading, even when it appears to be extemporaneous, is also far from neutral or natural. The establishment of a programme of study for reading and an assessment system to enforce that programme means that design for reading will be influenced by the delivery of that programme of study. Spatial arrangements for reading in schools are influenced by the nature and delivery of a programme of studies. For example, if phonics lessons are designed to be given to large groups of children then the children taking part must be able to see and hear the member of staff delivering the programme and consequently are likely to be seated on the floor close to the teacher rather than at tables and chairs distributed throughout the classroom. Similarly, if phonics programmes are delivered using interactive white board resources, then children are likely to spend at least one half-hour session sitting on the floor for that lesson and it is likely that a large carpet space on the floor close to the white board will be a feature of the classroom design.

There is very little available information about the proportion of children who may have initial or long-term difficulty learning through a systematic synthetics phonics approach. During my training as a Reading Recovery teacher and Continuing Professional Development

(CPD) training in schools I was told, anecdotally, by several teacher-trainers that around 30 per cent of all children found it difficult to learn to read using this approach. However, finding evidence to support this percentage has proved unfruitful. Whether this number is correct or not, some children from the Year One cohort in any given year are likely to need additional tuition so that they can reach a standard of reading through which they can access the curriculum and pass the screening test. These children will be included in additional, catch-up programmes, such as Early Literacy Support (ELS) for groups of up to six children or individualized programmes like Reading Recovery that "identifies children who are having difficulty in acquiring literacy skills at an early stage of their school career and aims to provide help before problems become entrenched" (Brooks, 2016, p. 84). Participants in these programmes are generally withdrawn from the classroom to a small-group room, if available, or to an improvised teaching area in a different part of the school. As a result of these withdrawals, often referred to colloquially by teaching staff as *interventions*, design for the beginner reader in the primary school is influenced by the phonics programme, since additional teaching spaces beyond the classroom must be provided for those who do not thrive within this programme. Occasionally these interventions take place within the classroom; however, since reading aloud is required, they may create noise and distract other pupils and teaching staff. Additionally, pupils taking part in the intervention may also be distracted by others.

Whenever beginner readers are withdrawn from a whole-class activity in a small group or for one-to-one interventions in reading, their class teacher, rather than any other member of staff, is deemed to be responsible for the effectiveness of the programme of teaching that is delivered by the DfE. The introduction of this obligation was outlined within the Special Educational Needs and Disability (SEND) code of practice: 0-25 years (DfE/Department of Health, 2015) which states that teachers are held "responsible and accountable for the progress and development of the pupils in their class, including where pupils access support from teaching assistants or specialist staff" (p. 99). However, despite this responsibility for "the progress and development of pupils" (ibid.), there is little research or advice for teachers about the suitability or adaptation of the spaces where this progress and development takes place within the school building. Even though this need to

withdraw pupils to separate areas for additional tuition is a direct result of the prescribed programme of literacy education, the spatial consequences of this need are under-researched. Above and beyond the need for additional spaces for beginner readers is the question of the suitability of such spaces for those readers and this is one of the gaps addressed by this study.

2.1.3 Addressing alternative paradigms of reading

If reading is complex (Goswami, 2008; Plaut, 2005) then research about reading and about the teaching of reading in schools undoubtedly reflects that complexity. The emergence of an increasingly diverse range of methodological approaches has been further complicated in the past two decades by the digital revolution. But while some researchers and teaching practitioners concur that research about reading should no longer be regarded as monomodal but as a "transdisciplinary nexus of practices" (Flewitt, Pahl & Smith, 2015, p. 2), others choose not to explore, or even acknowledge, alternative discourses beyond their own paradigm. Journals about reading are divergent in aim, language and philosophy and even the word *reading* has been politicized and contested within the context of teaching in schools.

The field of reading is rarely represented in cross- or multidisciplinary studies. This may be due to its complexity or to the "pluriformity of perspectives and approaches" (Mangen & van der Weel, 2016, p. 1) that has threatened to "obscure the immense potential for collaboration and dialogue across disciplines and paradigms" between researchers (ibid.). Conversely, teaching practitioners, who are often unfamiliar with the theoretical and philosophical debates about reading, may not only find it difficult to adopt a critical perspective towards their own practice (Daniels, 1993) but also may not be cognisant of the fact that a pluriformity of paradigms for the teaching of reading even exists, particularly when little money or time for training is given to help them develop such an understanding (Dombey, 1992).

When considering what it means to be a reader and what it means to be a beginner reader in school, it is imperative to be clear about one's own theoretical perspective with respect to reading. Having argued that a dominant, even normative perspective of the teaching of reading has been encouraged by the Department for Education (DfE) in primary schools in England, it is important to acknowledge there are "multiple and coexisting" (Mills, 2015, p.1) paradigms of reading. However, as these are numerous and complex, I have chosen to summarise the analytical and comparative research undertaken by a handful of researchers in the field to identify and survey an array of perspectives rather than examining these individual perspectives in detail. Mills (2015) argues that a contextualisation of the perspectives associated with reading is also a requirement of the doctoral enquiry since "post-graduate theses in the academy are required to draw from distinct theoretical frameworks to approach problems or potential issues of enquiry" (p. xxv) and consequently this summative approach is also intended to satisfy that obligation.

Hall's text *Listening to Stephen Read* invites the teacher/researcher to identify their own approach to reading. She calls upon eight reading experts with different perspectives about reading to listen to an audio recording and to read a transcript of one child reading aloud. The experts then respond to the same four questions. These include "What should his teacher do to enhance his reading?" and "What theoretical perspectives underpin your suggestion?" (2002, p. 3). From their answers, Hall identifies and categorises the respondents' perspectives within four distinct paradigms: cognitive-psychological; psycho-linguistic; socio-cultural and socio-political. She also notes when they employ more than one perspective, acknowledging that "theories, teaching and policies are not so conveniently labelled or pigeon-holed" (p. 1). Hall's text provides a nuanced introduction to different understandings of how readers make meaning when they read, encouraging teachers to examine their own practice and researchers to recognise that "[h]ow a reader is heard depends on how such factors are conceptualized by the listener (p. 6). Like Cliff Hodges, she argues that if teachers understand that reading is not neutral but situated within a paradigm, then they "are less likely to be controlled by a single version of literacy" (Cliff Hodges, 2015, p. 194).

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Mill's review of contrasting paradigms of reading maps well-established traditions and new interpretations of literacy education in the context of the digital revolution (Cope and Kalantzis, 2009; Mills, 2015). Mills outlines the perceived strengths and weaknesses of socio-cultural; critical; multimodal; socio-spatial; socio-material; and sensory paradigms, noting that they are cross-referential and never pure but always "emerging and becoming" (2016, p. xxv). The research carried out in this study of beginner readers and the spaces where they read in school can be located within three of these paradigms: socio-spatial; socio-material and sensory. However, while Mills is concerned with the capabilities of digital technologies in responding to "human motion, haptics, gestures and other sensory input" (ibid.) my own interest in sensory literacies centres on a somatic understanding of the reader in concrete spaces designated for reading.

Mangen and van der Weel, like Mills, consider different branches of reading theory. Their purpose as researchers is rather different, however. Not only do they intend to bring knowledge and understanding to educators and researchers of reading through a paradigm analysis but they also propose a theoretical framework to unite a range of these paradigms. They express the hope that this framework can offer an "integrative, transdisciplinary model of embodied, textual reading accounting for its psychological, ergonomic, technological, social, cultural and evolutionary aspects" (2016, p. 1). This proposed model defines "reading and literacy" as "human-technology interaction" and "embodied processes" and intends to facilitate "interdisciplinary, empirical investigations into aspects and dimensions of reading, some of which have hitherto been largely ignored" (p. 2).

Although the technologies and spaces associated with reading researched during this study have essentially been non-digital in orientation, the expansion of reading research, prompted by the development of digital technologies for reading and playing, has also provoked a re-evaluation of the haptic, spatial and bodily aspects of reading research that are germane to this thesis.

2.1.4 Valuing multisensory, multimodal approaches to reading

Mangen and Schilhab (2012) explore ways in which the modality of reading has become interactive and complex due to rapidly evolving digital technologies. Despite their focus on digital aspects of reading, their definition of reading, below, is pertinent here due to their recognition of the sensory aspects of reading and the reading body:

> Reading and writing are multisensory, cognitive processes relying on complex perceptual-sensorimotor circuits and connections. We do not only read with our eyes (not even in the most rigorous experimental setting). Neither do we write, text or tweet exclusively with our fingers and hands. All acts of human communication, creative expression, meaning construction, and learning convey the fact that, as human beings of a biological nature, our actions and interactions are inevitably and intrinsically multisensory, drawing on a range of interconnected sensory modalities defined by the total configuration of the human sensorium. (p. 2)

Design for reading in schools for the beginner reader demands a similarly multisensory, approach since reading is a somatic activity that takes place in concrete, material spaces. Mangen and Schilhab acknowledge that reading "like any cognitive process is embodied" and observe that this embodiment is a "blind spot" in the arena of research about reading (2012, p. 4). They attribute the emergence of this blind spot to the dominance of and schism between "those who emphasize the cultural and the social at the expense of the cognitive and the individual" and those who conceive of "any activity of literacy as largely an enterprise of neuronal activity in the brain" (ibid.), alluding to the two paradigms of reading considered by Cliff Hodges in section 2.1.1. Mangen and Schilhab conclude that in order to "theorize, assess, and develop the fields of literacy, reading and writing research" to accommodate ongoing shifts arising from the reading of print to reading on screen, transdisciplinary research should supplement existing paradigms and draw together fields such as "neurobiology, phenomenology, (cognitive) neuroscience, and theories of interface/product design and HCI" (p. 13). I concur that multi- or transdisciplinary research

is vital if reading and the experience of the reader is to be fully understood within the context of the school building.

Rowsell argues that while there has been significant research into "literacy and the everyday and literacy as a social, lived practice" fewer inquiries have been undertaken into how literacy is experienced perceptually or as an embodied experience (2014, p. 118). Approaching the bodily and sensory aspects of reading as a *literary* rather than a literacy theorist, McLaughlin (2015) laments the meagre attention paid to the physical activity of reading. Although the digital turn in reading has prompted a profusion of multimodal research into what happens when child readers encounter a digital interface (Burnett, 2016; Burnett & Merchant, 2017; Kress, 2003; Marsh, 2011), McLaughlin's approach is sensory, bodily and, like my own, largely concerned with analogue rather than digital experiences of reading. McLaughlin's text *Reading and the body* is cited by Mangen and van der Weel in their 2016 framework for cross-paradigm co-operation as a significant piece of research in this area.

2.1.5 Addressing the physicality and performative nature of reading

McLaughlin is a literary scholar and, as such, encapsulates his principal line of enquiry in *Reading and the body* as how hexis relates to hermeneutics, i.e. how "the procedures and habits of the reading body affect our experiences of *texts*" (p. 20, emphasis added). The aim of this study is quite different: a focus on the body of the beginner reader has been chosen to find ways of enhancing their experience of reading in school so that they might ultimately discover the ease, pleasure and concentration with which the expert reader experiences texts. McLaughlin's exploration of the procedures and habits of the reading body of the expert reader are, nonetheless, highly relevant to my study, since any design to support beginner readers' reading in school depends upon an understanding of the aspects of reading that present difficulties for the beginner reader and advantages for the expert.

McLaughlin does not deny the place of "consciousness and cognition, emotion and spirit, as literary theory has assumed" in his evaluation of reading but his aim is to promote an awareness of the physicality of reading, that it is "undeniably a bodily act" (p. 1). He achieves this by paying due attention to the physical manifestations of reading by the reader, delineating aspects of the process:

> Eyes scan the page, hands hold the book, body postures align the entire musculoskeletal frame around the visual and manual requirements of reading, adapting to the materiality of the book and to the physical space the reading body inhabits. (ibid.)

For the beginner reader in a school environment, however, an even greater range of physical actions are demanded by the act of reading. Beginner readers in school are expected to practise reading aloud and, consequently, to the eyes, hands and frame, we can also add the ears that distinguish letters, sounds and words; the tongue, teeth, lips and mouth that form the words that are spoken and the fingers that must learn to grip but not to tear pages as they are turned. The physically active and alert body of the young reader must also be stilled to keep the procedural aspects of reading under control. Beginner readers must master and synthesize these physical, as well as the cognitive, processes in order to read.

In addition to these physical procedures, the beginner reader also faces the challenge of learning to read *by* reading. As Bussis, Kantor and Alvermann (1988) explain:

> [B]eginning readers must practice with books -- negotiating their way through sentences and paragraphs -- if they are to learn to read. The obvious paradox of such learning is that novices necessarily begin practice before they command all of the requisite knowledge that enters a polished performance. Much of this knowledge, however, is best learned by attending to the cues and feedback available during the course of practice. It is the kind of knowledge (that is) very difficult to learn if one is not already able to read (p. 186).

A helpful analogy here is that of learning to drive and the beginner reader and the learner driver face a similar challenge: learning in a public, and sometimes challenging, environment. The learner driver, struggling to co-ordinate hands, feet, eyes and ears as they pull out of a junction, learns to drive in the midst of traffic. The learner reader also finds themselves managing tasks with a "high cognitive load" (McLaughlin, 2015, p. 21) amid the daily life of the school. A feeling of self-consciousness that may be experienced when practising an unaccustomed task in public can make it more difficult to accomplish: few people would want to have an audience when learning something new. Despite this, beginner readers who are withdrawn from the classroom for extra tuition often find themselves practising reading aloud in a dining hall or corridor in full view of anyone who passes by. Learning to read is performative and often a public experience and I regard the school building as a public space, even though access to this space by the general public is usually restricted. The potential embarrassment of learning to read without having enough of the requisite knowledge to 'perform' this activity in public may be magnified when the reader is in a performative space such as a large school hall.

The humanist geographer Tuan, whose poetic account of *Space and Place* questions the nature of experience and of the experiential perspective, gives an alternative account of a performative experience. He asks the reader to "imagine a shy man practising the piano in the corner of a large room. Someone enters to watch. Immediately the pianist feels spatial constraint" (1977, p. 59). His analysis of this scenario draws less on the self-consciousness of the shy pianist and more on his experience of space: "From being the sole subject in command over space, the pianist, under the gaze of another, becomes one object among many in the room" (ibid.). This alternative interpretation, replacing performative anxiety with a sense of unimportance and anonymity, offers another, subtle parallel with the shy, beginner reader practising in a space when they are interrupted by others.

Beginner readers in schools are taught to read aloud so that errors and misconceptions can be pointed out to them by fluent readers, usually teachers, teaching assistants or reading volunteers. However, beginner readers also read aloud because they have not yet learned

how to read without vocalization. Scholars of reading do not currently agree upon the era in which it became common for adults to read silently. De Certeau claims that "[t]o read without uttering the words aloud or at least mumbling them is a "modern" experience, unknown for millennia" (De Certeau, 1984, p. 175). Others, like Pugh (1978) suggest that silent reading became more commonplace at the beginning of the modern age, or earlier, such as during the twelfth century (Taylor, 1996). Manguel (1996) goes back even further to give an account of Augustine witnessing the Christian monk and later, Saint Ambrose (340 – 397 CE) reading silently, however, this does not necessarily indicate that reading silently was a practice common to anyone other than Ambrose.

Today, the dominant cultural image of the reader reading silently has led to a forgetfulness about reading aloud according to Duncan (2014). This may have influenced the design for reading in schools, in which book corners and libraries often resemble adult's reading spaces but in miniature, even though the implications of reading aloud mean that acoustics could be more carefully considered. In section 2.4 of this literature review, an investigation of designed spaces and furniture for reading in schools suggests that acoustic design for reading aloud is not necessarily fully accounted for in the design of primary school buildings, even though reading is the keystone of the key stage 1 curriculum.

Duncan's 2014 paper reflects upon the performative aspects of adults reading aloud and although her study is tangential to my investigation into where children read in schools, it offers a necessary reminder of the complexity of the physical, spatial, sensory and bodily aspects of reading. Duncan suggests that a better understanding of reading aloud practices by adults could allow us "to work towards richer, more relevant adult literacy provision" (p. 89). Similarly, a better understanding of the practices relating to reading aloud and the spatial and design implications for this practice could benefit children in schools in terms of literacy provision. This is an under-researched area that could usefully be addressed in further studies.

2.1.6 Reading, self-perception and self-consciousness

The views of child readers about reading are rarely transcribed in published studies of reading, particularly those studies with a predominantly psycho-linguistic, neuro-linguistic or cognitive-psychological perspective. Exceptions to this rule are Anderson (2009); McPhillips, Shevlin and Long (2012) in their small-scale study of the consultation experiences of pupils with additional needs in literacy; and Kiiveri and Määttä (2012).

Kiiveri and Määttä investigate whether a group of pre-school children can observe and verbally evaluate their own knowledge, emotions and learning. The researchers operate within a "cognitive-psychological" paradigm, which may account for their use of the term "illiterate" to describe some of the children in the study; and of learning to read as "the moment when a child learns the letter-sound correspondence and the concept of 'word', and understands the connection between them" (p. 765). The study took place in a Finnish kindergarten with children under the age of seven who had already encountered reading and writing practices but not yet begun their formal education. Some could already read and some could not.

The authors observe that children address texts in a variety of ways and that their concepts of reading include the physical, sensory and bodily aspects of reading far more than adult readers would be expected to, for example, "[m]any school entrants said that reading was something where one uses eyes, and light is needed; sometimes one uses one's mouth and voice but mostly one uses a book or something that can be read" (ibid.). Adults, including teachers, may not perceive reading to be a physical activity, however, it is clear from this study that children do. A further, comparative study situated within the English school system could prove to be a worthwhile companion piece to Kiiveri and Määttä's article, particularly since children in England begin their formal education in school at least two years before those in Finland.

Anderson is interested in the ways in which children who are unable to read fluently in the upper stages of primary education construct a reading-identity for themselves during silent

reading sessions. In her 2009 study of a small group of pupils whom she identifies as "dyslexic" (p. 83), Anderson observes that in sessions when the class are required to choose a text to read, this group of pupils either engage in a pretence of reading as an "interested dissembler" (p. 86) or do not engage and construct an identify as an "uninterested dissembler" (ibid.). Anderson asserts that unless these pupils are given the opportunity to construct their identity as "an interested reader" (ibid.) then not only will such reading sessions be a waste of time for them but that the sessions may also contribute to a further disengagement with reading.

Although the cohort of pupils studied in this doctoral project are in Year One, Anderson's observations are of relevance to my own enquiry because they suggest that when readers are required to *perform* the act of reading in front of others, this may cause them distress and lead them to reject the opportunity to read. This finding has encouraged the affordance of seclusion, both visual and acoustic, in propositional designs for a reading nook (as outlined In Chapter Four of this thesis) with the aim of offering a non-performative space for reading. Anderson's explicitly socio-cultural perspective and framework of symbolic interactionism is set against the main body of academic research into dyslexia from the disciplines of cognitive psychology or neurology, from which she understands literacy learning to be viewed as a "process of sequential skill development" (p. 83). I share Anderson's view that Goffman's (1956) metaphor of the theatrical performance is particularly relevant to the school setting, "where people co-operate to produce a managed performance, which is prepared in a 'backstage region and then presented to the world when 'frontstage'" (p. 85). Anderson's study offers a reminder that reading aloud is performative in nature unless the reader is given a secluded space in which to read, whether they are in the classroom or not. While the expert reader may understand reading to be a backstage activity, learning to read in can be experienced as frontstage by the beginner reader. When reading aloud in a school corridor, for example, members of staff, children from other classes and visitors to the school may provide a distraction or unwelcome comments as they walk past. Although I have chosen not to adopt a symbolic interactionist perspective here, the concept of frontstage and backstage areas of the school

is relevant to the discussion of teaching and non-teaching spaces to which beginner readers are withdrawn and is explored in section 2.4.

Performative aspects of reading inside the classroom are referenced by Graham and Kelly in their guide to the teaching of reading for students in teacher training, *Reading under control* (2000). Graham and Kelly present scenarios in which the child displays an awareness of the performative nature of reading, such as "when a child insists on choosing a long 'chapter' book which they really cannot tackle but wants to be seen reading", or when they do not want to be "shown up" and so "race through books from a reading scheme to keep up with their friends" (p. 24). Their findings coincide with Anderson's observations about dissembling readers: even when reading silently, children may feel the need to mime successful reading to demonstrate their competence to their peers and Graham and Kelly suggest that such scenarios will be familiar to experienced teachers.

Withdrawal is a term that is often used in the context of supplementary reading tuition for beginner readers beyond the classroom space and timetable. The word evokes a quiet space, set apart from others but the reality of withdrawal from a classroom to read with an adult may involve the beginner reader being taken to any space that is available within the building, including noisy or reverberant halls and corridors. Resource rooms are often heavily timetabled and must serve as additional teaching and sometimes counselling and office space for the whole school. Tchsumi, in *Architecture and Disjunction,* defines such spaces as "spaces of movement" where the articulation begins between "the space of the senses" and "the space of society" (1996, p. 111). Even when these "spaces of movement", such as corridors, staircases, ramps, passages and thresholds" are relatively or periodically quiet, the fact that they are intended to articulate movement through a school building makes them unsuitable places in which to learn to read.

Although reading is often understood as primarily a visual process it is also strongly linked to auditory processing and can be easily disrupted by external noise (Sharma, Purdy & Kelly, 2009). This is likely to be especially true of very young beginner readers whose auditory processing ability may not yet be fully developed and who must practise reading aloud in

schools so that misapprehensions and gaps in their understanding can be addressed by teaching staff. The literature of the teaching of reading through phonics for children with hearing loss also suggests that making the optimum use of residual hearing when teaching reading is crucial (National Deaf Children's Society, 2016) although children learn to read even when they are profoundly deaf. In 2.4 of this Literature Review, I address the impact of noise in schools upon the young, beginner reader in more depth and present evidence that strongly suggests that poor acoustic design can seriously impede the progress of beginner readers.

2.1.7 The perception of the absent body while reading

As I have indicated, there is an absence of research into the sites and spaces where readers read. Although McLaughlin (2015) touches upon specially designed buildings for reading, such as libraries, and also on how readers adapt to read in less suitable spaces, he focuses on the avid or expert reader. This leaves a gap in the research about reading and the body in the context of spaces designed for beginner readers in school. As Kiiveri and Määttä (2012) discovered in their interviews in a Finnish kindergarten, children could articulate their opinions about what it meant to be a reader even when they were not yet fluent or accomplished readers. This indicates that young, pre-readers are perfectly capable of expressing views about reading and should be consulted about the spaces in which they learn. Like Kiiveri and Määttä, I have researched the views of very young readers in this study, but unlike them, my intention was to investigate the spaces where these readers read in schools and to use this knowledge to explore through design the ways in which reading spaces could be enhanced to support them as readers. As McLaughlin notes, the physical task of reading has generally "gone without saying" for hundreds of years (2015, p. 163) and it follows that the spatial aspects of reading and the locations of reading have also been neglected. This is particularly true of beginner readers.

The following section explores a significant difference between the expert reader and the beginner reader: the ability to erase one's consciousness of one's own body while reading.

My intention here is to draw out the habits and procedures of the reading body and the consciousness of the expert reader to ascertain which aspects of their expertise could be reflected in a supportive environment for the beginner reader. Having established that the dominant method for the teaching of reading in contemporary English schools is driven by the delivery of a programme of systematic, synthetic phonics and that a cognitive-psychological approach to reading predominates, I begin by returning to the fundamental question of what it means to read:

> The wonderful thing about language is that it promotes its own oblivion: my eyes follow the lines on the paper, and from the moment I am caught up in their meaning, I lose sight of them. The paper, the letters on it, my eyes and body are there only as the minimum setting of some invisible operation. (Merleau-Ponty, 2002, p. 466)

Here, Merleau-Ponty remarks upon the way in which the act of reading text is self-erasing, promoting its own oblivion in the eyes of the reader. This feature of reading is discussed at length by McLaughlin, who contends that the assumption that reading is "a disembodied, purely mental act" is based on a false premise of what appears to be happening to the avid or expert reader rather than what is occurring. Like Merleau-Ponty, McLaughlin concludes that the act of reading somehow cuts the reader off from a sense of "the life of the body and the real world that surrounds it" (McLaughlin, 2015, p. 1). And yet, as previously ascertained, if the beginner reader uses many different parts of their body to perform the act of reading, might not this also be true of the expert reader? McLaughlin's response to this question is that reading is an activity that disguises itself: it is "the body tricking itself into thinking that there is something other than the body doing the reading" (p. 114) and he uses an analogy of a basketball game to explain why this might be the case:

> [I]f a basketball player is focused on how to dribble the ball, he or she cannot focus on the unfolding strategic situations of the game. Once the physical skill is mastered, the brain is freed up for the interpretive work. (pp. 26-7)

The same mechanism is described by Breivik (2008, p. 344):

In the same way that the world disappears as the tacit background for all our concrete and definite tasks and projects, the body disappears and becomes the tacit background for all our concrete skills and movements. It becomes 'a dark zone', the necessary background for all our concrete motor projects.

From this, one might conclude that our concrete motor projects, such as the physical tasks demanded by reading, can only be truly pushed below the level of consciousness of one's own body when they have become habituated or procedural. It could be also inferred from this that the learner, in this case, the reader, may begin to silence the world around them and attain a deeper focus on the text once these complex tasks have been mastered. Thus, while expert readers can conjure up a protective or enveloping atmosphere around them that allows them to erase their consciousness of the physical aspects of their own bodies and the material aspects of the world, inexperienced or beginner readers who do not yet have this level of mastery cannot yet achieve this protected state. Merleau-Ponty argues that we should attend to both what is visible and what is invisible, to our "dark zone" of concrete motor projects "which we never give enough thought to" (1993, p. 124) and this thesis contends that this attention and understanding would be especially helpful when considering the requirements and needs of the beginner reader.

Although the term phenomenology is occasionally applied to reading, it bears little or no resemblance to the philosophy of Merleau-Ponty, being unengaged with the physical and sensory operations of the reader. Poulet, in his essay *Phenomenology of Reading,* suggests that a transformative process within the consciousness of the reader "causes the physical objects that surround that reader to disappear from their consciousness, including the book itself" (Poulet, 1969, p. 53), an insight he shares with McLaughlin (2015). However, Poulet does not linger upon this disappearance or the subsequent replacement of "mental objects in close *rapport* with [the reader's] own consciousness" (p. 55, original emphasis), while the development of these ideas is potentially one of McLaughlin's foremost contributions to literacy education and an understanding of the teaching of reading. As a literary theorist, McLaughlin acknowledges a kinship with proponents of reader-response theories, who view

reading as engaging the "active and activating consciousness of the reader" (Fish, 1970, p. 141). Reader response theory as a rule, however, does not engage with the notion of what happens to the body of the reader when reading and consequently is only incidentally relevant to this study.

McLaughlin's research suggests that intense concentration is necessary for all readers but that expert readers who have habituated themselves to mundane bodily practices required for reading, lose consciousness of their bodies primarily because of the intensity of the concentration required to engage fully with text (McLaughlin, 2015, p. 6) He also explains the erasure of the body in spatial terms, asserting that "the concentration necessary for reading is so intense that it is vulnerable to a distracting place and responsive to a supportive space" (p. 139). Following a theoretical perspective closely aligned with Bourdieu's theory of practice and the Bourdieuian concept of *habitus* (Bourdieu, 1977), McLaughlin argues that since reading "must always occur within socially defined circumstances" (2015, p. 88), the social demands associated with each reading space will produce variable "physical and psychological responses, including a reading posture that makes sense in the social situation" (ibid.) Examples given by McLaughlin of settings that dictate specific physical and psychological responses to reading include a schoolroom, a church and the dinner table (ibid.). He suggests that although expert readers can maintain a silence deep enough to read in most noisy or distracting environments, they still benefit from quieter, more appropriate spaces in which to read that are as free of distractions and interruptions as possible. In section 2.3.1 of this Literature Review I explore how the qualities of spaces that are designed primarily for fluent readers, such as prestigious libraries or monastery carrels, can be viewed as precedents for the design of physically, socially and cognitively sympathetic spaces in schools for beginner readers. Here, however, I continue to explore the experience of the real reader reading and the sensation of being lost in a book with little or no consciousness of one's own body.

Graham and Kelly, who position themselves within the psycho-linguistic paradigm of literacy while recognising the value of a socio-cultural perspective, offer support to the teachers of beginner readers when these readers lack confidence or manifest a

"sullen/terrified/indifferent/aggressive" (Graham & Kelly, 2000, p. 150) attitude towards reading:

> Our feeling is that no child does not want to read. Angry, rejecting behaviour when it comes to reading lessons is a symptom of the grave realisation that fills the child of his incompetence in an area that society considers so essential. (ibid.)

As Penelope Fitzgerald observes, "Twice in your life you know you are approved of by everyone - when you learn to walk and when you learn to read" (Fitzgerald, 2005, p. 490). Graham and Kelly indicate that this approval, or lack of approval, about reading is well understood by even the youngest pupils in school who, in my own experience as a teacher of reading, sense that a moral judgement is being made by adults about whether they are fluent readers or not. Graham and Kelly notice that children may become angry when they realize that reading "brings so much pleasure, knowledge and satisfaction to those around him [sic]" (ibid.). This anger is then "compounded by the evidence that it is so easy for some of his classmates" (ibid.). The authors argue that most "children with difficulties have missed vital early literacy experiences, have been confused by information that lets them down and have been allowed to slip through countless nets, ranging from inadequate resources to badly managed classrooms." Rather than blaming "the victim", they suggest that "there is a great deal that can be done to help the poor reader, especially if it is done early enough" (ibid.). This doctoral study investigates how the creation of supportive spaces for beginner readers can complement intervention programmes to help such readers at an early stage in their school career before their difficulties are compounded by the requirement to access the written curriculum for most, if not all of their lessons. Graham and Kelly add to the evidence produced by Kiiveri and Määttä (2012) that even very young children can observe and evaluate their own learning with respect to reading. Both sets of authors also refer to societal expectations of readership, with Graham and Kelly contending that even very young children sense these expectations. The cumulative body of research about how readers perceive their own ability to read within the social context of the school institution suggests a significant need to mitigate against iniquitous comparisons between readers. These findings are reflected in aspects of the nook design that aim to encourage

beginner readers to enjoy sharing books with others or to read comfortably in a secluded spot without feeling that they are constantly being watched over and judged and this will be explored further in the design of the first iteration of the nook in 4.1.

2.1.8 The expert reader's experience of immersion in a text and the reading cocoon

For McLaughlin, immersion in a book offers "a pleasurable sense of privacy, of personal time and space" (p. 31) while Jacobs describes the sensation of possessing, or being possessed by, a "deep solitude" (2011, pp. 124-5). Children's literature also provides many examples of enthusiastic readers who can separate themselves from social interactions when they read. One such reader is Katy Carr, the bookish heroine of a series of three eponymous novels:

> Anything really interesting absorbed her so that she never knew what was going on about her. The little girls to whose houses she went visiting had found this out, and always hid away their story-books when she was expected to tea. If they didn't do this, she was sure to pick one up and plunge in, and then it was no use to call her, or to tug at her dress, for she neither saw nor heard anything more till it was time to go home. (Coolidge, 2012)

Francis Spufford, meanwhile, gives a vivid account of being engrossed in literature as a child to the exclusion of everything else:

> Then, flat on my front with my chin on my hands or curled in a chair like a prawn, I'd be gone. I didn't hear doorbells ring, I didn't hear suppertime called, I didn't notice footsteps approaching of the adult who'd come to retrieve me. They had to shout 'Francis!' near my head or, laughing, 'Chocolate!' (2002, p. 2)

Both experiences will be familiar to avid readers and their families: not only do these readers behave as if they are invisible to others but they are also unaware of the needs of

their own bodies. Spufford notes that the expert reader appears to lose the ability to perceive sound as well as peripheral vision:

> 'I can always tell when you're reading somewhere in the house,' my mother used to say. 'There's a special silence, a *reading* silence.' I never heard it, this extra degree of hush that somehow travelled through walls and ceilings to announce that my seven-year-old self had become about as absent as a present person could be. The silence went both ways. As my concentration on the story in my hands took hold, all sounds faded away. My ears closed. (...) There was an airlock in there. It sealed to the outside so that it could open to the inside. The silence that fell on the noises of people and traffic and dogs allowed an inner door to open the book's data, its script of sound. (p. 1)

Thus, the expert reader is not only silent but also able to conjure a silence around them to close their ears, just as one might close one's eyes.

For McLaughlin, the act of concentrating upon a text creates a spatial separation that other might intuit as "a cocoon of personal space that other people hesitate to invade" (2015, p. 31). The metaphor of the cocoon is cleverly constructed because it alludes to the way in which the reader learns to protect and conceal themselves from the outside world, while continuing to grow and develop inside the cocoon, like a pupa, although their development in this case is cognitive and emotional rather than physical. An avid reader like Katy Carr or Francis Spufford can endlessly recreate this protective cocoon for themselves in environments where they know that they are safe but a less experienced reader, or a reader in a more threatening environment, may need to draw upon the material objects around them to feel a true sense of retreat from the world around them. Bronte's Jane Eyre, while undoubtedly an avid reader must conceal herself in the "double retirement" of a good book and a thick curtain so that she can conceal herself from view at her window-seat (1864, p. 4). Unlike Spufford and Katy Carr, Jane Eyre is bullied by other members of the household and her reading nook doubles as a hiding place.

Fischer, in her 2017 paper about readers as place-makers, with a focus on children in the middle of their childhood (approximately ages six to thirteen), identifies a process of *nesting* in which the child or young person manipulates their physical environment in preparation for the act of reading. In the course of her study, Fischer discovered that the participants often sought out a special place to read a particular text and also that when school reading experiences are bad, that they may avoid reading spaces that remind them of school. Spaces in which they could exert some control over their environment and which were secretive or hidden often particularly suited the participants' needs as a context for reading. Fischer's study suggests that the spaces where young readers read are often meaningful to them and that a "place-conscious literacy curriculum should support a culture of readers as place-makers, where children's histories of readers are honoured in instructional design (...) we should be bringing the rootedness of real reading into our classroom practices" (p. 1486).

2.1.9 Discipline and the body of the young reader

Young children do not necessarily need to learn to read to experience McLaughlin's "cocoon of personal space" (p. 31), since being read to by an adult may also offer a similarly comfortable, comforting feeling. However, as Jacobs contends, "reading, which starts for many of us in a warm cocoon of security accompanied by an unassailable sense of being loved, gradually and inexorably (…) turns into a site of stress" (2011, p. 148). Reading in school may be additionally accompanied by specific reading-related tensions, for example, due to an awareness of one's reading status within the class (ibid. p. 147). McLaughlin agrees, commenting that reading "is no longer play, in the everyday interaction of loving parent and child. It is now a disciplined practice governed by explicit institutional procedures" (2015, p. 73).

The disciplinary procedures and routines sometimes associated with reading in school can be augmented by the difficulty of learning to read for many beginners. Jacobs describes the effort that it takes the reader to learn or to "come across" and adds that this effort might be

"lessened by habit, but is never eliminated; and attentiveness remains always an achievement, one that cannot be taken for granted" (2011, p. 125). McLaughlin, in the same vein, recites a list of commands given by parents and teachers that beginner readers must comply with as they learn to read:

> Sit still and keep quiet. Maintain a consistent distance between the eye and the page. Hold the book with both hands to keep the pages open. Move your eyes from the page on the left to the page on the right. Turn the pages carefully. (2015, p. 73)

McLaughlin draws a parallel between these disciplinary instructions and those by de La Salle in *The conduct of the Christian schools* (1996), reproduced below, which are also cited by Foucault (1977) regarding disciplinary practices and schooling:

> The students should always be seated during the lessons, even while reading from the charts of the alphabet and the syllables. They should hold their bodies erect and keep their feet on the floor in good order. Those who are reading the alphabet and the syllables should have their arms crossed. Those who are reading in books should hold their books in both hands, resting them neither upon their knees nor upon the table. They should also look straight before them with their faces turned slightly in the direction of the teacher. The teacher must take care that the students do not turn their heads so much that they may be able to speak with their companions and that they do not turn first to one side and then to the other.
> (de La Salle, 1996, p. 59)

McLaughlin views conformity to the discipline of reading as integral to the process of reading, observing that "[w]ithout this fundamental physical training, reading could not occur" (p. 73) and yet his tone when describing the nature of reading as disciplined could be interpreted as waspish:

> [A]ll reading is disciplined reading and all successful readers are good little boys and girls who learned to keep still and be quiet, to do what their teachers taught them,

to accept the rules, right down to the operation of the muscles that move their eyes. (pp. 68-9)

Even if one accepts that discipline is integral to the activity of reading and that young readers must be disciplined in order to learn to read, it is still possible to suggest that the value of reading spaces in the primary classroom where this discipline is relaxed may encourage those readers who have not yet learned how to "keep still and be quiet" to enjoy reading for pleasure in their own way, giving them enough satisfaction on those occasions to persist with the more difficult aspects of learning to read and thus avoiding becoming one of Anderson's uninterested dissemblers (2009, p. 86).

2.2 Phenomenology, architecture and design

This study adopts a phenomenological perspective in examining the impact of design on the beginner reader in school. In the following section, I outline the phenomenological tradition of philosophy, distinguishing between the methods of two of its leading figures, Husserl and Heidegger and demonstrating how Merleau-Ponty develops the Heideggerian understanding of 'being in the world' to emphasize the significance of the body in the world. The absence of a true phenomenology of reading that attends to the physical and bodily aspects of the activity is noted. Despite this absence of a corpus of literature that links the body of the reader with the spaces in which they read, I draw connections between the work of Merleau-Ponty and architects who take a phenomenological approach to their discipline to bridge this gap, some of whom are particularly interested in the atmospheres that are created by particular spaces. Finally, the importance of valuing children's sensory sensibilities is explored and the influence of the Mosaic approach for the study is discussed.

2.2.1 Phenomenology: Husserl, Heidegger and Merleau-Ponty

At the beginning of the 20th century, Husserl responded to what he regarded as a crisis in mathematics and the natural sciences with a method of self-critical reflection upon "the *lived evidence* of experience itself" (Reeder, 2010, p. 23, original emphasis). This "philosophical clarification of the *lived world*" (p. 41), also known as the 'life-world' or '*Lebenswelt*', was intended to be "the descriptive, non-reductive science of whatever appears, in the manner of its appearing, in the subjective and intersubjective life of consciousness" (Moran, 2005, p. 2). Husserl contends that things are unknowable through theory, since theories are essentially the creation of philosophers aiming to generalize about knowledge. He dismisses a positivist epistemology that regards so-called 'objective' measurement as worthy of attention. For Husserl, reality cannot be understood as external to human understanding and a lawful, material world that is separate from the human experience is thus unrecognisable (LeVasseur, 2003, p. 408).

Fundamental to Husserl's method is phenomenological reduction, a concept that has much in common with two other procedures he introduces: *bracketing* and *epoché*, the latter deriving from the Greek word for suspension. The principle behind these conceits is that is possible to set aside or bracket one's preconceptions to carefully and fully describe a phenomenon without the process of analysis changing the nature of the experience. Husserl claims that to make genuine contact with and, indeed, to go 'back to the things themselves', one must set aside one's own prejudices and previous experiences. Heidegger, once Husserl's most illustrious student, disagrees. In *Being and Time* (2000), Heidegger argues that consciousness cannot be separated from the world and that philosophers, as Fällman eloquently explains, "must not be conceived of as being equipped with extraordinary kinds of consciousnesses that enable them to simply contemplate everything that appears to them" since they are "as much a part of the reality they try to grasp as everyone else" (2003, p. 21).

This profound disagreement between Heidegger and Husserl resulted in a metaphorical fork in the road for phenomenology. As a consequence of this divide, phenomenology is often described as a philosophical *movement* "made up of a number of combined contributions, which originate from several different and not always mutually supportive sources"

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(Fällman, 2003, p. 16). While Seamon suggests that there are "as many phenomenological styles as there are phenomenologists" (Seamon, 1982, p. 119), academic researchers may choose to follow a broadly Husserlian path along which experiences can be bracketed or put aside or, alternatively, a Heideggerian immersion in the world. Merleau-Ponty, whose thinking has profoundly influenced this study, was the first of the phenomenologists to delve into the relational aspects of the body-subject-world and to describe how the body acts as an optimizing agent in the world (Breivik, 2008). Although one of Heidegger's major contributions to the movement of phenomenology was the overthrow of the subject/object dichotomy through the emergence of 'being-in-the-world' (Heidegger, 2000), Heidegger was less interested in the physical body of the person to whom phenomena reveal themselves than Merleau-Ponty. Merleau-Ponty understands the world as "inseparable from the subject" (Merleau-Ponty, 2002, p. 499), where the subject is "nothing but a project of the world, and the subject is inseparable from the world, but from a world which the subject itself projects" (ibid.) but he develops Heidegger's account with his understanding of the body as "the active agent defined in relation to situations and tasks". (Breivik, 2011, p. 320). For Heidegger, the hand that holds the hammer is not accounted for, while for Merleau-Ponty, the relationship between object and body in the world is both active and fundamental (ibid.).

A phenomenological approach is well-suited to holistic questions of meaning that spring from experience. It is especially helpful with respect to the investigation of questions about phenomena that are not well-understood but that are central to the lived experience of human beings (LeVasseur, 2003, p. 408). This aspect of phenomenology is fundamental to my own research with beginner readers and teaching practitioners. Breivik (2008) explains how Merleau-Ponty brings the active agency of the body into focus:

> [T]he perceiving subject is not a self-transparent ego looking at the world from a fully illuminated perspective, but rather a body-subject involved with things in the world in a way that makes perception and action an interactive project of the subject body and the surrounding objects. (p. 343)

This conception of the body in the world is in harmony with the Human Computer Interaction model proposed by Fällman with which I frame this thesis and this aspect of the study will be discussed in detail in Chapter Three.

2.2.2 Body-world entanglement and the poetics of space

As Merleau-Ponty develops his ideas about the entanglement of the body in the world, he also begins to draw more heavily upon metaphor to exemplify and illuminate these ideas. In *Eye and Mind* (1993, pp. 124-5), he offers the following, metaphorical view of the body:

> Visible and mobile, my body is a thing among things; it is one of them. It is caught in the fabric of the world, and its cohesion is that of a thing. But because it sees and moves itself, it holds things in a circle around itself. Things are an annex or prolongation of my body; they are incrusted in its flesh, they are part of its full definition; the world is made of the very stuff of the body.

Describing Merleau-Ponty's phenomenology as "inherently and fundamentally spatial", McCann (2015, p.189) surveys the metaphorical and poetic landscape evoked by Merleau-Ponty with reference to his late text, T*he Visible and the Invisible* (1968). In bringing to light key metaphors used by Merleau-Ponty to characterize his sense of the post-Cartesian entanglement of body and world, McCann urges us to attend to the way in which those metaphors offer the reader a shared space in which to connect with his phenomenological understanding. The Greek letter chi, χ, for example, known as the "chiasm" or "chiasmus" is introduced by Merleau-Ponty to evoke the relationship with being as "simultaneously a taking and a being taken, the hold is held, it is inscribed and inscribed in the same being that it takes hold of" (Merleau-Ponty, 1968, p. 266). McCann suggests that Merleau-Ponty's evocative "folds of fabric, coils of wire, thickets, and interwoven landscapes, with their unexpected spatial holes and unpredictable spatial collapses" allow us to glimpse "the corporeal realities of the experience" (McCann, 2015, p. 195). Both McCann and Mazis, (2016) seize upon the physical, material nature of the Merleau-Pontian expression of the

abstract fusion of body and world. Mazis suggests that Merleau-Ponty aligns philosophical thinking and writing in a wholly original and poetic manner, beginning with a "language use that reaches into the underside of silence that lines language" (p. 293-294). This position has informed my approach to this research study in which I understand the (reading) body of the child at school as entangled with the concrete, material environment of the school building as well as the routines and practices that are performed within that building.

In his unfinished manuscript entitled *The Visible and the Invisible* (1968), Merleau-Ponty uses metaphor to convey the enmeshed nature of human experience, objects and the world. This same metaphorical fluency is developed in the work of the philosopher Bachelard. Bachelard's *Poetics of space* (2014) first published in English in 1964, employs metaphor to evoke the nature of being human-in-the-world but with a subtly different emphasis: the communication of shared perceptions of the atmospheres and qualities of archetypal objects, such as shells and nests, and architectural features like corners.

The influence of *Poetics of space* extends to architectural theory. Hertzberger, the architect and writer, borrows and extend metaphors proposed by Bachelard in his designs and texts. Like Bachelard, he communicates the connection between the spatial, designed qualities of architecture and the emotional needs of human beings. Referencing Bachelard's evocation of the nest in *Poetics of Space,* Hertzberger conjures the metaphor of a "safe nest" (2008, p. 35) as representative of his conception of the classroom as a domestic, dwelling space where students can return as needed during or at the end of the school day. This classroom-as-nest offers a place where students' belongings can be safely stowed but also as somewhere they belong. A second metaphorical notion of interest is Hertzberger's "cupboardness" (p. 108). Hertzberger believes that "[p]eople and things require nooks and crannies to inhabit in space" (ibid.) and accordingly designs sheltered, private spaces for pupils in his school buildings. Remarking that "an essential quality in this respect is what we might call 'cupboardness' with the kangaroo as an ideal" (ibid.), Hertzberger captures an essential idea here: the human body in need of seclusion but not wholly removed from the world. The kangaroo's pouch, like the nest, signifies a dwelling place of safety for a young creature: a place that offers concealment from potential predators; nurture and parental

care. As semi-enclosed, secluded rather than entirely confined spaces, both nest and pouch offer the young nestled inside a secure vantage point from which they can assess the risks and advantages of the world outside. This metaphorical understanding of space by Hertzberger heightens an awareness of how such spaces might be represented within the school building. The use of metaphor in the phenomenological tradition to describe subtle qualities of space may also facilitate communication between designers and the end-users of school buildings.

2.2.3 A phenomenology of reading

My understanding of the relationship between reading and design has been particularly informed by the poetics of phenomenological enquiry as revealed through the philosophical texts of Merleau-Ponty and Bachelard. Having noted this, however, neither Bachelard nor Merleau-Ponty, despite the latter's reputation as "the most body-conscious of the phenomenologists" (McLaughlin, 2015, p. 8) offers a "sustained reflection on the body of the reader" (ibid.).

Making a connection with a phenomenology of reading is difficult, since literary theorists who adopt a phenomenological approach to reading seldom recognise the physicality of the reader. This may be due to the broadly Husserlian approach embraced by literary theorists, like Fish (1970) and Holland (1968) who belong to the school known as Reader-response. While these theorists view the reader as an active agent in the production of meaning, the reader's "sense of agency is purely mental" (McLaughlin, 2015, p. 6). Nor is the "absent body" of the reader when reading attended to within their literary paradigm. McLaughlin's phenomenological perspective, by contrast, reflects a sympathy with the Merleau-Pontian approach, in which spaces influence the reading body just as the reading body influences the spaces around it:

> The reading body extends out into the world, monitoring and familiarizing the surround. It makes a home for reading, designing perfect places, or carving out a workable, private space in a public world. The spaces where reading occurs in turn affect the reading body. (McLaughlin, 2015, p. 139)

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The theoretical perspective taken by this thesis recognizes the dialectical nature of the relationship between the reading body and the spaces it inhabits, in that "the spaces shape the reading and the reading shapes the spaces" (ibid. p. 139). This resonates with Merleau-Ponty's notion of "a taking and a being taken, the hold is held" (1968, p. 266), recognizing the human body as mindful and highly attuned to the atmosphere of spaces that it inhabits (Böhme, 2013).

2.2.4 Phenomenology in architecture and design

In *Reading and the Body* (2015), McLaughlin contends that the physical, sensory and bodily aspects of reading have been overlooked for far too long. Many prominent architects also believe that architecture has failed to adequately or imaginatively address the relationship between the human body and the buildings that are designed for them to inhabit. These architects, who include Holl, Pallasmaa, Libeskind and Zumthor explore the phenomenology of architecture through text and design, contending that the sensory, relational aspects of architectural design must be more fully understood and communicated.

Pallasmaa argues that if a building fails "to fulfil the basic conditions formulated for it phenomenologically as a symbol of human existence, it is unable to influence the emotional feelings linked in our souls with the images a building creates" (1996, p. 451). For Pallasmaa, "[v]ision reveals what the touch already knows" (2005, p. 42) and he suggests that architectural practices are responsible for buildings becoming "image products detached from existential depth and sincerity" (2005, p. 30). He argues that a consequence of our indulgence in the hegemony of the ocular over other sensory experience is that the experience of architecture risks becoming flattened and two-dimensional and that we risk becoming mere "spectators of images projected on the surface of the retina" (ibid.) in our everyday lives. In his introduction to the 2005 edition of *The Eyes of the Skin*, Holl describes Pallasma's text as a clear argument for "the crucial phenomenological dimension of human experience in architecture" (p. 7).

The "emotional feelings" (Pallasmaa 1996, p. 451) engendered by being in spaces within the school building are an integral element of this thesis. The question of "where beginner readers read in schools" will be addressed by a taxonomy of the *types* of spaces where beginner readers read in 4.2, as a first step towards an examination of the qualities of those spaces and their success or failure at addressing the bodily, sensory needs of the beginner reader must also be considered. A starting point for the design of the reading nook artefact, created as part of this study, is the exemplification of how buildings and spaces make their inhabitants feel. For Seamon, a "phenomenological perspective enlarges the emotional range of place feelings to include care, sentiment, concern, warmth, love and sacredness" (Seamon, 1982, p. 132). For Pallasmaa, the emotional attachment to a built environment provokes feelings that include being "sheltered and shaded"; having "a sense of security" and experiencing "a sense of togetherness or isolation" (Pallasmaa, 1996, p..452). Although Pallasmaa has not designed school buildings, his consideration of the emotional dimensions of buildings and spaces in general contributes to this inquiry because the emotional responses of the inhabitants of school buildings are generally unremarked upon and under-researched.

2.2.5 Valuing spatial atmospheres when designing for readers

Like Pallasmaa, the philosopher Böhme also regards architecture as failing to address "the mindful body", instead treating humans "merely as bodies" (Böhme, 2013, p. 27). Böhme contributes the notion of "mindful physical presence" (ibid.) to the phenomenological debate, paying heed to the interplay of body and mindful body and describing this phenomenon as "the sense one has of the space where one is" (ibid). Hofmann, an architect, writer and founder of the architectural practice Baupiloten, builds upon Böhme's understanding of atmosphere "as a sensed physical presence within a space" (2014, p. 23) and uses this understanding as the basis for participatory design projects with students in schools and universities. Hofmann suggests that the human body responds to the atmospheres of spatial, built design in a similar way to which the body might respond to

meteorological conditions. For Hofmann and her colleagues at Baupiloten, communication is the key feature of their practice. She contends that atmospheres are "communicable and actively communicating" and that it follows that "communication via atmospheres can be a method that integrates users and their emotional state into the design and architecture created during this process, resulting in a high degree of identification with it" (p. 22). In her text *Architecture is Participation,* Hofmann suggests several methods for optimizing the communication between stakeholders and architects.

I drew upon Hofmann's engagement with the atmosphere of designed spaces when making fieldwork notes in schools during the empirical research phase of this study. This was done to capture a sense of the spaces where readers read so that I could reflect upon these (necessarily subjective) observations in the second design phase of the nook. I also reflected upon the sense of the space that readers might experience when inside the nook by imagining atmospheres, such as tranquillity, cosiness and security, that I might attempt to provoke through design. Pallasmaa and Hofmann's recognition of the importance of the connection between the emotional, physical and sensory aspects of human experience and the atmosphere or feelings created by a designed space or building have both influenced the trajectory of this research project.

2.2.6 Valuing children's sensory sensitivity in school design

Architectural practices that have a phenomenological approach to school design, such as Baupiloten, are rare. Certainly, Baupiloten's participatory method of design is time-consuming, which may be a disincentive to small architectural practices with a limited budget. It may also be that it is more difficult to convince stakeholders and clients of the value of a phenomenological approach i.e. the unconscious ways in which we human beings sense spaces and atmospheres are, by their nature "retained as the background order of things rather than consciously valued or understood" (Blundell Jones, 2014, p. 13). For Blundell Jones, it comes naturally to humans to gauge how many steps to climb without tripping in a familiar building (ibid.) and, in the words of Merleau-Ponty, "[a] woman may,

without any calculation, keep a safe distance between the feather in her hat and things which might break it off." (2002, p. 165) but these experiences are rarely remarked upon in everyday life.

Thus, an opportunity to understand the significance of the relationship between the human body in space and time may be disregarded by both architect and client. After all, despite the billions of people for whom reading is a daily practice, the literature about what it means to be a reader and what reading is, is relatively sparse. It is therefore hardly surprising that other aspects of life that are daily taken for granted, such as the spaces we inhabit, are often also barely remarked upon. As children grow up, they may also begin to lose their ability to map the world around them through their bodies. Geographers have long been interested in the differences between adults and children in their perception of the world, particularly through the senses of touch and movement (Bartos, 2013; Rodaway, 1994; Tuan, 1977). Another geographer, Cele, contends that human adults depend on logic rather than their bodies to perceive their surroundings, unlike children who "smell, touch, taste, climb, swing, bend and stroke objects. They balance on things, they use smell for direction, they take their shoes off in the grass and they stamp in puddles" (2006, p. 37).

I can vouch for the sensory precociousness of young children from my experiences as a primary school teacher in Year Two with children of six and seven years old. At the end of the day, there would inevitably be a large pile of jumpers on the classroom floor that had been discarded during playtime and that had remained unclaimed. Very few of these jumpers had identifying name tags and yet each child in the class could, seemingly, not only identify their own jumper by its scent but also identify the jumper of every other child in the class in the same way. This was not something that I or any other of the teachers could do.

If it is true that adults have either forgotten or disregarded the power of their bodily sensoria to perceive aspects of the world, then there is even more reason to take extra care when designing reading spaces for beginner readers, for whom the sensory perceptions of their surroundings are likely to be compelling and immediate.

2.2.7 The influence of the Mosaic approach

Böhme's notion about "the sense one has of the space where one is" (2013, p. 27) recalls one of the central questions of the Mosaic approach, "What does it mean to be in this place?" (Clark, 2010b, p. 11). Clark then deepens this question to ask, "What does it mean to be a *child* in this place?" (ibid., p. 173, emphasis added) and, in so doing, makes a valuable contribution to the debate about how environments that are ostensibly created for children, such as schools and nurseries, are shaped by adult beliefs and assumptions about children's needs and capabilities (ibid). As an adult designer of a propositional reading space for children, I am aware that my ideas about what children want and need from a reading space are likely to be very different from their own. In a subsequent project beyond the remit of this thesis, I researched the meaning of the nook for children in two primary schools. However, I raise these questions from the Mosaic approach here to acknowledge that during the design-oriented research phases of this project, as detailed in this thesis, I was not yet able to bring the nook into a school for children; consequently, I was unable to address the vital question of what it means to be a child in the nook in this study.

Singer, an architect and writer who worked on a project using the Mosaic approach with Clark in a school setting, remembers how Clark would use the framework to investigate spaces in the school building that were often ignored by adults but that were of significance to children who were in the nursery:

> Sometimes certain places were important to them, like the bottom of the stairs, because that's where they would meet an older sibling. Places like the pegs were important – seeing their own names gave a sense of identity and belonging. Just thinking about these moments in school design may seem "everyday" but they are really important to the child's journey (Dyer, 2016).

Six years later, Clark and Singer revisited the school where the project had taken place and sought out the children who were still at the same school to talk to them about their memories of the project:

We reviewed images from the study and the children talked about the things and places in their nursery that had been important to them. They still remembered those places, like the pegs, and talked about these aspects as if it were yesterday. It was so powerful for me to see how that had continued. Similarly, the staff talked about how the experience influenced how they used their space differently or positioned things on the walls, by thinking about the child's perspective. (ibid.)

This account not only appears to confirm the hypothesis that "the child knows the world more sensuously than does the adult" (Tuan, 1977, p. 185) but also suggests that when adults consider the environment from the child's perspective, they are more likely to understand the spatial and sensory requirements of children. When designing school buildings and the spaces within them, children should be consulted about the corporeal and sensory experiences of spaces that are thrown up by their everyday routines and arrangements in the school building. For example, if a child is learning to read in a corridor near the toilets, do the toilets smell bad to that child? The smell of a place is not necessarily a positive experience for some children (Bartos, 2013, p. 93). While I found it more helpful to align myself with phenomenological thinkers, such as Merleau-Ponty, and with phenomenological architect-writers, like Pallasmaa and Hertzberger, to underpin my research design than to use the Mosaic approach as an overarching framework for this study, the Mosaic approach has nevertheless influenced the complexion of this study. This is because it calls upon adults, including teaching practitioners and architects, to respect the experiences of children in the spaces and places that they inhabit daily. Clark gathers *perspectives* rather than *perceptions* of particular spaces (2010b, p. 11) and regards the Mosaic approach as "a set of narrative tools" (ibid. p. 27), locating the Mosaic approach in the category of research framework rather than as a methodology, but nonetheless, this approach draws attention to the physical, sensory and emotional aspects of school life that are often forgotten or disregarded by adults.

In the second part of this study, I have located Merleau-Ponty's contribution to the phenomenological movement in the context of his two most celebrated predecessors and

evaluated the value of his philosophy to this study. I have also selected instances of a phenomenological attitude towards architecture and architectural theory by Pallasmaa and Hertzberger that have directly informed the design of the nook artefact, see section 4.1. In the third part of this Literature Review, I turn to the spaces themselves: reading spaces for the expert and inexpert reader; reading spaces in schools; and spaces that nourish the body, the mind and the emotions of the child.

2.3 The design of spaces

> The body responds, as it has always done, to such basic features of design as enclosure and exposure, verticality and horizontality, mass, volume, interior spaciousness, and light.
>
> (Tuan, 1977, p. 116)

Tuan's encapsulation of the features of architectural design that exert a direct influence on the body reminds us that there is no such thing as a neutral space or natural space, just as there is no such thing as a neutral or natural approach to reading: both are constructed by humans and yet both are frequently taken for granted in schools. In the absence of a research literature of spatial design for the beginner reader in schools, examples of spatial design for the expert reader in the library and the monastery have been collected in this section of the thesis to inform the design of the nook. Having established that the reading scholar's comfort is held in high regard in these hushed spaces and that their powers of concentration are as cherished as a fragile ornament, the lack of attention to spatial design for reading in book corners and other spaces in schools for the young reader is sobering. Section 2.3 is organized into six parts, discussing reading spaces specifically designed for the expert reader in 2.3.1; reading spaces in schools in 2.3.2; libraries and library spaces in the school building in part 2.3.3 and in 2.3.4, spaces that are not designed for reading, but that emphasize the atmospheres and qualities that could potentially enhance the reading experience, such as a sense of respite and retreat, quiet, calm and cosiness. In 2.3.5, an instance of a child-designed space, the den, is introduced as a possible precedent for the

nook and finally, in 2.3.6, abstract influences upon spatial configurations, such as power-relations, are discussed to conclude this second section of Chapter Two.

2.3.1 Reading spaces for the expert reader

2.3.1.1 The library

A common point of reference when discussing design for reading is the library: the archetypal building built for readers. Libraries may be public, private and limited by access to a community, such as a school or university faculty. Whether they are grand in scale and lavish in decoration or not, the function of libraries beyond the storage and display of books, is diverse. In *The meaning of the library: a cultural history*, Crawford provides a comprehensive list of the potential functions of the library, including "a centre for scholarship"; "a repository of hidden or occulted knowledge"; "a sanctum"; and "an emblem of wisdom and learning" (2015, p. xvii). In this study, however, I am primarily interested in the physical accommodations made for the reader by library designers.

Alberto Manguel, the director of the National Library of Argentina, suggests that the physical and sensory qualities of libraries can enhance "the imaginary space we construct when we lose ourselves in the pages of a book" (Manguel, 2009, p. 133). This is a subject upon which Manguel is an expert. Borges, the visually impaired Nobel laureate, chose Manguel to read aloud to him when he was a teenager. Subsequently, Manguel amassed an extensive collection of books that is reputed to be one of the largest private collections in the world and commissioned the building of his own library. Manguel, who spoke of the library as "a clinic for the soul" in a talk given at the British Library (2017), records qualities that may enhance or diminish the "mental atmosphere that we create in the act of reading" when inside a library produced by "the distance of the shelves, the crowding or paucity of books"; "qualities of scent and touch" and "the varying degrees of light and shade" (ibid.). Manguel's proposition that the architecture of the library building may alter the mood of the reader echoes McLaughlin's analysis of the relationship between the body of the expert reader and the reading space in which "[t]he reading body allows concentration to absent

itself from the surround, but the surround persists as a determining but almost invisible background (McLaughlin, 2015: 139).

Manguel also recognises that readers may have different preferences for the scale, dimensions and even the shape of the space in which they read, a variation in preference that potentially poses a challenge to the design of the nook, which must appeal to as many beginner readers as possible:

> There are readers who enjoy trapping a story within the confines of a tiny enclosure; others for whom a round, vast, public space better allows them to imagine the text stretching out towards far horizons; others still who find pleasure in a maze of rooms through which they can wander, chapter after chapter (Manguel, 2009, p. 133-4).

The Bibliothèque Nationale in Paris was redesigned by the architect and bibliophile Henri Labrouste in 1868 to create spaces within spaces that were relatable, intimate and protective within the vastness of the library building. Labrouste's considerate design included the provision of bookshelves whose width was determined by the average human arms' span so that readers could reach books without having to stand and the height of each shelf was modelled on the reach of a hand (ibid., p. 149). As reported by Manguel, each reader "inhabited a private realm, seated at a numbered desk that had been fitted with an inkstand and a pen-holder, and was kept warm in winter by a combination of metal stokes and hot-water radiators that also served as footrests" (ibid.). This attention to the human scale of the interior of a building prompts a comparison with the architect Mary Medd, who was similarly attentive to the dimensions of the child's body in relation to the school building:

> [E]verything in the primary school is seen and used by people whose eyes are about 3ft 6 inches above the floor (and who don't get much chance of looking down on things). It is unpleasant not to be able to see out of a window, not to be able to reach a book on a shelf, to have to work at too high a table. Only if dimensions derived from body measurements and posture studies are constantly applied to

every fixture and item of equipment can an influence be brought to bear on an interior of the building as a whole (as cited in Burke, 2013, p. 153).

Unlike Labrouste's high-status commission for the French National Library, which came with a generous budget, many contemporary state schools in England struggle to fund sufficient numbers of teaching staff, let alone the funds to purchase library furniture or to secure the services of architects to create well-designed reading spaces. And yet perhaps Labrouste's aspirational design for scholars should not be set aside when proposing an alternative, exploratory design for children learning to read in schools, despite the relatively austere conditions in which English children are currently educated. Even though beginner readers in English schools may not be able to read written texts by the age of five, they will certainly be familiar with and have access to picture books whose illustrations often tell a richer story than words can convey. Design for beginner readers in schools should be held to the same high standards of design accorded to expert readers beyond the school building so that novice readers understand that reading can be a pleasurable and comfortable experience and so that they begin to identify themselves as readers.

2.3.1.2 The carrel

Arguably, successful library design conspires with the "absent body" (McLaughlin, 2015:10) of the reader to minimise dissonance between the reader and their environment, allowing them to become fully immersed in a text. For centuries, public and private library buildings and library spaces within buildings have been designed to promote concentration by means of a physical or regulatory barrier against interruption or distraction. This has also been the case for monasteries, in which the elders of the community were provided with reading carrels where they could study texts, giving them a flat surface on which to rest heavy books, a seat and an alcove or semi-protected cubby that was fashioned in wood and/or stone. (Clark, 1901). Versions of these carrels can still be found in some private schools, offering a barrier to distraction for students doing preparatory work for the following day's

studies. The architect Dominic Cullinan remembers his own experience of carrels at his public school in the north of England in the 1970s:

> Imagine a big room and these desks in boxes. There's enough room for a desk, a chest of drawers and a few shelves but in a box. So, when you're sitting down, you don't see over the box and when you're standing up, if you're tall enough you do … They're arranged like knights' moves on a chess board; they're all sort of arranged at right angles to each other to create a kind of maze of spaces. The monitor would sit on a raised platform, which was a great big Victorian windowsill and be able to see from above this array of carrels (Dyer, 2015).

The influence of the carrel on contemporary library design can still be seen in academic libraries, where barriers against interruption are sometimes provided by cubicles or cubbies. Employees working in large, open-plan offices are also likely to be familiar with the contemporary equivalent of the carrel in their workplace, where screens and barriers may be installed to minimize distraction and noise. Psychoacousticians Oseland and Hodsman (2015) suggest that in these conditions, "adequate acoustic boundaries should also be created between quiet zones for concentration and those where speech may be elevated, such as collaboration spaces", with dedicated "quiet booths" as an effective solution when space is limited" (p.39). The artefact that emerges from the design element of this project, the nook, reflects those intentions in the context of a school building.

2.3.2 Reading spaces in schools

2.3.2.1 The library corner

The research literature concerning the design of reading spaces in the classroom is, as yet, minimal despite a well-established tradition of teacher-designed book corners (known as library corners in the US) inside the classroom. Morrow and Weinstein (1982) contend that a proliferation of library corners in classrooms was one of the outcomes of a wave of studies (Cohen, 1968; Durkin, 1966; Chomsky, 1972) suggesting that young children benefit from

early exposure to pleasurable experiences with books (Morrow and Weinstein, 1982, p. 131).

Morrow (1982) and Morrow and Weinstein (1982) give an account of a single research study that aimed to assess the relative merits of library corner design in which student teachers were commissioned to create and assess library corners designed with particular qualities in mind. These two articles are worthy of attention, despite their age, because they list the criteria for what they consider to be a "well-designed library corner" (Morrow & Weinstein, 1982, p. 135), even though the authors' methods are, as they admit themselves, flawed. The study took place in 13 kindergarten classrooms and the student teachers responsible for creating these library corners were then also wholly responsible for assessing their impact upon the readers. Despite this, the checklist of attributes for a reading space in a classroom is an unusual and useful piece of research because it isolates qualities of a space designed for the beginner reader that the authors believe will make a difference to their reading. The attributes identified by Morrow and Weinstein (1982, p. 133) are as follows:

1. a location in a quiet area of the classroom
2. physical and visual accessibility
3. enough room to accommodate at least four children
4. shelving that can display books with the covers visible
5. partition from the rest of the room
6. an element of softness, such as pillows, beanbag chairs or a mattress;
7. a display of objects related to the books and a 'literature prop' such as a felt-board story or story tapes

This checklist pays attention to acoustics (1); access (2); dimensions (3); display (4 and 7); seclusion (5 and 1); and comfort and support for the body (6). These attributes are all addressed by the first iteration of the nook, see figures 4.1 – 4.4.

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Although specific cohorts of children within the kindergarten were not studied systematically by Morrow and Weinstein, "anecdotal comments" (p. 136) made to them by teachers suggest that children with unspecified "behavior problems" (ibid.) were inclined to seek refuge from the teacher and from other children in the library corner and often used the headsets provided to listen to story tapes, possibly as a way of blocking out the noise of the classroom. This secondary affordance of providing a secluded or separate place to retreat from a noisy environment is also designed for in Chapter Four, see 4.1.3, Feature C.

2.3.2.2 Small-group rooms

Architect Mark Dudek's approach to design for reading spaces may be less poetic than that of Manguel but he shares an eye for the details of their attributes. In *Architecture of Schools: The New Learning Environments*, originally published in 2000, Dudek advocates the provision of a classroom book corner or "dedicated zone, where children can browse through texts undisturbed" and where "appropriate task lighting can make the relationship between book and child even more intimate" (2014, p. 49). Dudek also proposes that what he describes as "special needs reading" (ibid.) should be delivered in a private area to promote concentration such as a "dedicated small reading room which can be closed off, yet is accessible directly off the classroom" (ibid.). Like Labrouste, Dudek pays careful attention to scale and dimension, advocating that the height of shelving for books is tailored to the child's reach and that display racks are included to encourage exploration and enquiry.

Juxtaposing the list of qualities for the design of a reading space with Morrow and Weinstein's, provides further stimulation for discussion about qualities that may benefit readers in reading spaces in schools and that could be also shared with teachers who would like more training and support when designing reading areas in their school.

Table 1: Desirable qualities of reading spaces in schools
Dudek (2000) and Morrow & Weinstein (1982)

Desirable qualities of reading spaces	Dudek	Morrow and Weinstein
Good acoustic design		x
seclusion/privacy	x	x
Appropriate lighting	x	
Comfort and support for the body		x
Appropriate scale/dimensions	x	x
Access	x	x

Dudek only indirectly alludes to the acoustic qualities of a space by referring to the privacy of a room that can be closed off, whereas Morrow & Weinstein, with a background in education research, begin their list with "a *quiet* location". Dudek's sensitivity to the quality of light of the reading space, including the notion that lighting could enhance the intimacy of a space for reading, however, is a valuable addition to the literature because the architect of a school building can influence the lighting design of a space before a school is built, whereas teachers may have little influence in this respect beyond the use of the on/off switch.

2.3.3 Libraries and library spaces in schools beyond the classroom

Although there are many more research studies about school libraries than there are about book or library corners, few of the former studies reference the relationship between designed space and the body of the reader. Emphasis is often placed instead upon the

relationship between the school library and academic achievement (Barrett, 2010; Lance, 2002) while publications directed towards the school librarian generally attend to the literacy and literature-related aspects of the library.

The *Little Library*, Amsterdam

While there are many examples of school libraries in private schools in England that were originally designed for that sole function, it is far less usual to find an integrated, discrete library in a state-funded primary school. Designated library spaces in these schools are more likely to be reclaimed classrooms, resource rooms or school halls. Hertzberger's *Liittle Library* at the Apollo Montessori school, Amsterdam, is a rare example of a space designed by an architect for the primary school reader. As one of several "carefully placed retreat areas positioned throughout the general open areas of the school" (Burke, 2016:191), the *Little Library* is a "recessed carpeted area" tucked under a flight of stairs and "furnished with a single child-scaled chair that invites the pupil to enter this cosy space and read for a while" (ibid.). The *Little Library* offers intimacy and seclusion but also a vantage point from which one can look out onto the world and, in the words of Hertzberger, a sense of "cupboardness" (Hertzberger, 2008, p. 108). The *Little Library* may be vulnerable to being repurposed as an apparently unoccupied space but its thoughtful attention to the potential needs of the child, in-keeping with the Montessori Method of teaching, have allowed it to remain as a noteworthy example of an architect-designed space in a school for the young reader.

The quiet room

In searching for precedents for reading spaces beyond the classroom and the school library in the research literature, an intriguing example of a room in a primary school that may have been set aside for quiet reading long ago came to light. The British documentary film *Children at School* (Wright, 1937) includes a sequence of only 17 seconds in duration in

which a teacher interrupts a girl sitting alone on a chair, reading silently in a bright, well-decorated room. The sequence begins with the camera focused upon a neat, handwritten sign attached to a closed door that reads: 'This is the quiet room'. There is no accompanying narration, but it may be surmised from the dialogue between the teacher and the girl that she has been engrossed in a book for some time alone in the room. It may be that this room and the practice that takes place within it is a construct of the film, of course. However, in paying attention to the qualities of this reading place, borrowing from Morrow and Weinstein's (1982) criteria for a well-designed reading space, features that may have been considered to be suitable for quiet reading and reflection in a 1930s school in England become apparent. The room appears to offer privacy, with a door that can be closed and is a comfortable, airy, well-ventilated space with large windows. There is even a connection with the natural world through two large vases full of flowers set upon the window ledge, although it is not known whether these flowers were specially placed in the room for the film. The smiling face of the girl and the cheery voice of the teacher who greets her as she enters the room, suggests that access to the room, in this instance at least, has been given as a reward rather than a punishment.

This footage of a quiet room is a rare example of documentary evidence of a space that accommodates the needs of the reader in a school, providing a peaceful, secluded, comfortable space to read, although in this case only a single reader is accommodated for here. Burke, in *Quiet Stories of Educational Design* (2016) argues that although the provision of quiet spaces in schools in the middle decades of the 20th century "envisaged and celebrated a view of the child as a self-directed individual capable and free to exercise choice and occasionally to choose to access some available space and time to concentrate, think, consider and even dream" (p. 193), such attention to "the detailed planning of quiet intimate spaces is rare in school design today (p. 191).

In the next part of this Literature Review, I draw on descriptions of spaces in schools that were not designed specifically for reading but that inspired elements of the nook design. They include rooms for therapy and counselling; a welfare room and even a geography store cupboard. Some of the spaces investigated share common qualities and atmospheres. Most

are liminal and transitional rather than formally designated or designed, offering a different experience of school to those who visit them. The studies that reference these spaces often contribute rich descriptions of their attributes and also of the response of their inhabitants when that has been observable by the researcher.

2.3.4 Spaces that promote comfort, quiet and rest in the school building

2.3.4.1 Designs for rest and retreat by the Medds

Franklin notes that "[t]he yoking of architecture to educational purpose was one aspect of a multi-faceted period in British school design that extended from the Education Act of 1944 until recession and retrenchment in the early 1970s (2012, p. 321). A feature of this alliance between architecture and pedagogy in Britain during this post-war period was the exploration of the school classroom beyond a simple rectilinear design with rows of desks and chairs that, instead, offered a variety of spaces in which to explore. The architect Mary Medd, who enjoyed a progressive, independent education as a child, extended this provision to children in the schools she designed with her husband David between the 1950s and 70s. The Medds closely observed the activities and endeavours of children and teachers in their schools prior to the design phase of each project. During one such period of observation, Mary Medd noted that very young children when in need of rest seek out places to "curl up under a table or a rug, in a box or barrel, along a wide, low window ledge with a cushion or two'" (Medd 1976, p. 27). The Medds designed from "the inside out" (Burke & Grosvenor, 2008, p. 132), believing that schools should offer "the right kind of spaces in which children may rest quietly" (Burke, 2013, p. 124) in addition to spaces in which children could work collaboratively to solve problems or gather together to listen to stories. In the curtained recess at Eveline Lowe primary school, furnished with a divan bed with pillows, a rug and a rocking chair, children could rest their bodies as well as their minds (Department of Education and Science 1967, p. 31).

Dudek (2014) and Morrow and Weinstein (1982) refer to ease accessibility as a desirable quality for a reading space. Beyond ease of access, however, is the ability to choose to

access or leave spaces as desired. The Medds created designs for schools in which the prevailing pedagogy allowed children a spatio-temporal freedom to enter and leave these spaces at will. Such freedom has diminished to the extent that even in the Reception and Year 1 classrooms in England in the 2010s, children are given very little opportunity to choose self-directed tasks or explore their environment through play, except at designated break times. It is important to note some of Mary Medd's observations took place in nursery or pre-school settings with very young children who had not yet entered formal education but for older children in schools where a progressive pedagogy was not practised, the opportunity for children to find spaces where they could retreat, reflect and rest in their schools would have been, and remains, more contentious.

An echo of the Medds' approach could still be heard three decades later in the recommendations of Hrekow, Clark and Gathorne-Hardy for quiet spaces in mainstream schools "where pupils can go to calm down, cry, reflect, work with a therapist and friend, or just play in private" (2001, p. 29). Their research highlights the importance of designing spaces in schools that support children's emotional needs and suggests that to be an inclusive school, a variety of spaces must be provided for all pupils, including quiet, calming ones.

2.3.4.2 Nurture rooms

In '*We change lives in here': Environments for 'Nurturing' in UK primary schools* (2007), Newman, Woodcock and Dunham discuss the role of the nurture room in primary schools. Following an observational study of three nurture rooms, the authors recommend that there should be a dedicated space for the nurture of children at the heart of every primary school. They also assert that a nurture room should be designed into every new primary school, being as vital to the school institution as the classroom and not a "desirable but unnecessary addition" (p. 439). The authors also stipulate that this dedicated space must be located away from the traditional classroom and playground environment, somewhere that children perceive as "other" (p. 440). Additionally, and of relevance to the nook as an

alternative or *other* space, Newman et al. make specific recommendations about the design and use of nurture rooms, including "comfortable spaces for reading" (p. 439); "a room layout which provides corners and alcoves to allow physical proximity to adults in a safe, controlled manner" (ibid.); and small spaces, like alcoves, that offer "a physical proximity to adults in a safe, non-threatening, non-hierarchical way" (p. 436). The authors observe a small child "curled up on some cushions in an alcove sharing a book quietly with a teaching assistant" (ibid.) and are impressed by the affordances of this alcove as a feature of the room, a feature that allows for physical closeness, "when children choose to share these spaces with others" (p. 435) but also by the quality of separation for those who need some time alone. One of the three schools taking part in the research undertaken by Newman et al. had created an "angry house" where children could "vent their emotions on cushions and malleable materials", offering a "safe, private space for children to express emotions that would otherwise be suppressed" (ibid.). Newman et al. contend that schools need nurture rooms because children in schools need spaces in which to express and to come to terms with their emotions. The nook may also offer such a space.

2.3.4.3 Therapeutic, sensory rooms

Dedicated therapeutic spaces in schools are described in detail in *The Quiet Place* project, a study involving at least 17 primary schools from Merseyside, UK (Renwick & Spalding, 2002; Spalding, 2000; Spalding n.d.) and a single-school project inspired by *The Quiet Place* in Harrogate, UK (King & Chandler, 2002). Both projects offer holistic, therapeutic support to children in their own primary schools. The original project sought inclusion for children who might otherwise not able to stay in primary schools, while the second was prompted by an unusually high incidence of serious illness and bereavement within a single school community. In special schools, it is standard practice to have a sensory, "calming room" but the schools taking part in these projects are mainstream, community schools where therapeutic spaces are less common.

There is an interesting juxtaposition between the establishment of an atmosphere of calm and tranquillity in these therapeutic spaces with the offer of sensory stimulation to "awaken interest in the child" (Spalding, n.d., p. 9). Spalding contends that healing in the child occurs through "an opening out of the senses" (p. 4) rather than a muting or a shutting down because the child's "sensory channels" will have become "restricted through anxiety or other powerful feelings generated by their life conditions" (ibid.). Even so, "there is no bombardment of the senses in the Quiet Place but an organisation of sensory materials which allows for an unfolding" (ibid.). The creative imagination of the child is fostered through the theming of these rooms, such as "dolphin cave" or "dragon's nest" (ibid.), although there is no suggestion that these narratives are co-designed by adults and children, unlike the Baupiloten projects in which students and young people co-create stories that shape the design of their buildings (Hofmann, 2014).

A child-participant in the Quiet Place project expresses their gratitude for the opportunity to escape from a classroom where "you always have people screaming down your ears" (Spalding, n.d., p. 7) and offers the insight: "It is a very calm place, a place to be calm" (ibid.). This comment is reminiscent of the dialectical relationship expressed by McLaughlin about spaces and the reading body "the spaces shape the reading and the reading shapes the spaces" (2015, p.139). In the Quiet room, the space suggests or projects a calmness that can be accepted and incorporated.

Autism-friendly designs in school include escape spaces that offer a space for respite from an overstimulating environment. Mostafa (2008, 2014) suggests that empirical research has demonstrated the benefit of these spaces for children with autism in their learning environments. She recommends that they include "a small partitioned area or crawl space in a quiet section of a room, or throughout a building in the form of quiet corners" (2014, p. 147). She also suggests that the neutral sensory environment inside the space can be customized by the user. These recommendations are pertinent to the design of the nook as an alternative space for children with autism or other special educational needs in the classroom. I use the term "with autism" throughout this thesis rather than "autistic spectrum disorder", which implies dysfunction, after Baron-Cohen (2017).

2.3.4.4 The welfare room

A further example of a therapeutic space that nourishes the senses of the child in school is beautifully described by Clark in her 2010 retrospective micro-study of a welfare room in a Mary Medd-designed school that opened in 1949. Clark, like Newman et al. (2007) questions the privileged status accorded to learning spaces such as the classroom above other types of space in the school building. The liminal, "in-between space" of the welfare room (Clark, 2010a, p. 775), which has long since disappeared, is re-imagined by Clark through documentary evidence and interviews with the former welfare assistant. It is a homely space where "objects and routines" (p. 774) entwine, allowing for "time for children to sit and be listened to" and creating an "unhurried" experience of school (p. 773). The welfare room, like the therapeutic rooms described above, offers a "less visible territory within school" (p. 778) where pupils can take refuge from institutional routines. Here, Clark's attention to the temporal as well as spatial arrangements of the school are invaluable and her forensic analysis of the qualities of the room suggests that its "in-between" or liminal status is of immense value to the pupils and the staff who use it because it allows a physical separation, or a period of respite, from school-space and school-time. Clark asks, simply: "Was this room home or school?" (p. 776).

The welfare room has two declared functions: as a safe place for children who are unwell to rest; and as a workshop where children who might have difficulties remaining in class can undertake simple, useful tasks alongside the welfare assistant such as backing display boards. Claxton, in a lecture given at the Royal Society of Arts (2016), claimed that contemporary schools are "desomatising institutions" and called for them to recognise and restore the "fine, practical intelligence of the craftsperson" to the school curriculum. The welfare room provides an example of how at least one school institution was once at ease with this premise.

2.3.4.5 The geography store cupboard

In the section of this Literature Review about phenomenology and architecture, I cited Hertzberger's notion of "cupboardness" as an emotional response to a physical location (Hertzberger 2008, p. 108, see section 2.2.2). In two related papers, Jones (2008) and Anderson and Jones (2009) document and analyse the responses of students to a designed space that literally, as well as metaphorically, affords a sense of "cupboardness". This space is a geography store cupboard used by Jones to interview participants in a research study following her discovery that they were being inhibited in their responses to her research questions because they were worried that they might be overheard by their teachers. My interest in these two papers centres on this cupboard as an alternative, liminal space in a school and on Jones' findings about the qualities of privacy and, in particular, of auditory separation produced by the students and the cupboard space.

Inside the store cupboard and without the fear of sanction by teachers, "thoughts, opinions and 'voices' that would normally be oppressed or repressed could be spoken and heard" (Anderson & Jones, 2009, p. 297) and fun and laughter are a feature of the conversations that take place "out of earshot" of the teachers (ibid.). Jones remarks that the store cupboard is a "relatively undisturbed space" (Jones, 2008, p. 330), indeed, a "private space" and a site for revelations about "'not so innocent activities', such as under-age alcohol consumption and drug taking" (ibid,) where the sense of privacy creates a "confessional quality to the space" (Anderson & Jones, 2009, p. 297). The two authors are interested in how spaces are co-produced by students but not especially interested in the design of school buildings. Like Dudek, however, who argues for the provision of "safe, manageable social spaces" (Dudek 2014, p. 38) into which the secondary school pupil can withdraw to construct their own "little shelters" (ibid.), Jones and Anderson convey the value of safe, private, social spaces for students in secondary schools. The nook also explores the potentiality for little shelters where conversations and reading can take place in a space where its inhabitants do not feel that they are being overheard.

2.3.5 Dens

Dens are places that children construct or claim and modify for themselves and, as such, are unlikely to exist within the school building. Common features of dens are the marking out of a "spatial boundary (...) between the child and the rest of the world" (Kylin, 2003, pp. 1-2) and the imperceptibility of the den to the adult eye (Hart, 1979). Chalwa suggests that the outstanding quality of these "small, leftover spaces" appears to be that "children can appropriate these spaces in undisturbed privacy and shape them to their will (1992, p. 76)." Kylin's understanding is that children regard dens as both social and secret places and notes that they value the quality of observing others while being hidden from view particularly highly (2003, p. 11). This is reminiscent of Hertzberger's clever conflation of the kangaroo and the cupboard, offering a safe space from which children can observe the outside world (Hertzberger, 2008) and of his under stairs *Little Library*, cited in 2.3.3 Although the nook was not constructed for children by themselves, an intention of the design is that it should be understood, as much as possible, to belong to children and to be claimed by them. The design also recognizes the importance of the nook as a vantage point, offering different and new views of the environment of the school from inside.

Sobel (1993) details a two-location study that centres on two communities, one in the West of England and the second on a small Caribbean island. In both locations, children have plentiful access to the outdoors and materials for building dens. In both cultures, hideaways and special places are commonly made by children, with around 60 per cent of participants in the study having access to a den. Sobel reports that children in these two communities start to become involved in den-building at around the age of 6 or 7, the same age or just a year older than the beginner readers in my own study.

Heretofore, this Literature Review has compiled examples of designed spaces for reading, such as libraries and book corners, to isolate features and attributes of their design that may enhance the reading experience of the reader. Further examples of spaces not explicitly designed for reading, such as therapeutic rooms, were also surveyed to the same end. The following section, 2.4, considers how the arrangement and management of spaces in

schools, rather than features of the spaces themselves, influence the ways in which those spaces are experienced by their inhabitants. For Kenkmann, "[a]ny spatial relationship also has a power component" (2011, p. 282) and this must be considered when designing an item such as the nook that will create spatial boundaries and set up power relationships between adults and children and between children and children.

2.3.6 Abstract influences on spatial design in schools

Although there is a considerable gap in knowledge about how spaces in schools are experienced by actual readers reading, the literatures of children's geographies, the history of education and other related fields usefully examine the relationship between spaces, children and their teachers. These studies are relevant to the discussion of where beginner readers read even if the context is, by necessity, broadened from the reader to the pupil. It is anticipated that this area of study may lead to a better understanding of the spatio-temporal arrangement and management of the spaces where readers read in school. The studies cited below also warn of unintended or hidden qualities of spaces, routines and practices that may emerge as a negative experience for children, such as bodily restriction or confinement for punishment.

2.3.6.1 A Foucauldian lens

It is not uncommon for a Foucauldian perspective to be used by researchers when examining the relationship between the management of space and time in school. Like Gallagher (2008), Pike (2010) and Kenkmann (2011), I understand power within this perspective to be a "diverse, ambivalent web of relations, rather than a unidirectional force of domination" (Gallagher, 2008, p. 144). Foucault's discussion of the micro-physics of power is of relevance not only to the monitoring, supervision and surveillance of children and young people but also reveals the discipline of the body in the institution. Caluya (2010) is also helpful in this respect, clarifying Foucault's analysis of Bentham's Panopticon in the

influential text *Discipline and Punish* (1977) as "the internalisation or interiorisation of the watchtower's gaze, such that the prisoner became his own overseer" rather than flow of power simply centring upon the authority imposed by prison guards (Caluya, 2010, p. 625). However, although power may flow between prison guards and prisoners between teachers and pupils rather than only travelling in a single direction, a dominant ideology is projected in prisons and in schools that interrupts and diverts this flow. McGregor asserts that many schools "maintain structures, architectural and organisational, that derive from 19th century elementary schools, designed to produce the docile bodies required for factory working" (McGregor, 2004, p. 17). Kozlovsky (2010) and others (Saint, 1987; Franklin, 2012) recognise that for a post-war period of more than two decades, a "socially engaged practice committed to progress" (Kozlovsky, 2010, p. 697) "incited" children to "appropriate their environments and express their interiority through playful, self-initiated activity" (p. 700) even in the school classroom. Kozlovsky's analysis of the operation of power during this period in schools refers to the activation of pupils as subjects, "making them aspire to be free" (ibid.) rather than "dominating or disciplining subjects who were by their nature free" (ibid.). From these two descriptions by Kozlovsky and McGregor, it is clear that schools are not a "neutral and passive 'container'" (Burke & Grosvenor, 2008, p. 10) but should be understood as "designed spaces that, in their materiality, project a system of values" (p. 8).

Parnell and Procter suggest that the act of a child changing the physical environment is "a significant visible manifestation of a challenge to the traditional power structures of a school" (2011, p. 87). This view is borne out in contemporary mainstream English schools where it is almost unimaginable that children could significantly change or rearrange the environment of their own classrooms with a design of their own choosing without permission. Early childhood researchers Fleet and Britt go further, describing institutional spaces inhabited by very young children as "places of adult control over children's experiences, bodies and movement; of surveillance and regulation, informed by discourses of suspicion, supervision, protection and normalisation" (2011, p. 144), while sociologists James, Jenks and Prout, in examining childhood in social spaces, conclude that "the central issue to be explored in relation to childhood space is (…) that of control" (1998, p. 38).

Kenkmann interrogates the "rarely challenged or questioned" (2011, p. 284) rules and expectations of the classroom and how they inform relationships, asserting that these rules are primarily spatial:

> [T]he teacher has more space available to him or her than the students. The teacher can stand up and write on the board; the teacher is entitled to walk around. The teacher can limit and define the use of space by students. Any equipment available is to be seen in the teacher's space. (ibid.)

The potential of the nook to be used as an alternative, potentially subversive space in a classroom, anticipates a challenge to these rules and expectations.

2.3.6.2 The arrangement and management of time and space in school

In their consideration of institutional geographies and internal exclusion in UK secondary schools, Barker, Alldred, Watts and Dodman examine the design of spaces for enforced "internal exclusion" from school as a disciplinary measure "to ensure the young person is not present in a public place during normal school hours" (2010, p. 379). These spaces are commonly referred to as *Seclusion Units* or simply *Seclusion*. In my discussion of reading in section 2.1 and of the welfare room and the Quiet Room Project in 2.3.4, I examined connotations of seclusion as a positive quality, giving respite from noise or interruption and as space to express emotion. However, the Quiet Room Project and welfare room were in primary schools, giving children who were unable to remain in the classroom for reasons of anger, upset or illness a haven. In secondary education, *Seclusion* is a spatio-temporal strategy of punishment "based on absence, physical isolation and separation from the rest of the school" (Barker et al., 2010, p. 380). When designing alternative spaces for beginner readers, such as the nook, it is imperative to confront the possibility that it may be used as a disciplinary tool even in the primary school by some members of staff rather than as a comfortable, quiet space for reading.

James et al. note that within the disciplined system of control in the classroom, pupils may be placed "in the reading corner, required to stand by a teacher's table or come out to the front" 1998, p. 45). This is a spatio-temporal feature of bodily discipline unrelated to the activity of reading but which may lead to an unintended association between the book corner and punishment by the child. Further study of the correlation between reading spaces and spaces for punishment and reward in the primary classroom would be welcomed in this respect, particularly with regard to positive and negative connotations that may arise from the daily management of reading spaces in schools by teaching staff.

Bull and Back (2003) observe that Foucault's detailed account of Bentham's panopticon in *Discipline and Punish* (1977) omits to mention that Bentham's design included a series of listening tubes so that guards could hear inmates talking. This observation is also mentioned by Gallagher, who suggests that surveillance could be reconceptualized to encompass "panauralism" (Gallagher, 2010, p. 268). As Bull and Back note, "[t]he history of surveillance is as much a sound history as a vision history" (2003, p. 5) and when considering a design for a space for beginner readers, the balance between auditory and visual monitoring by teaching staff must be considered.

2.3.6.3 The flow of power in space

Loxley, O'Leary and Minton (2011) study the ways in which pupils are engaged in a complex pattern of appropriation and re-appropriation of space within the school domain. The authors endorse Catling's proposition that pupils have an enduring ability to "find ways to circumvent the constructions or bounds placed on their use of space" (2005, p. 327). In pursuit of these circumventions, Loxley et al. identify different types of space that are co-produced by teachers and pupils as *adult space; privileged space;* and *ambiguous space*, concluding that pupils implicitly understand the spaces in which they find themselves in school and attempt to structure these spaces. Moreover, the authors assert that once they appropriate spaces in schools, pupils will attempt to re-negotiate the space for themselves, holding onto the re-negotiated qualities of these spaces because "pupils have an interest in

the spaces of their primary school, and a clear interest in commissioning these spaces in service of their own intentions" (Loxley, Minton & O'Leary, 2011, p. 61). The authors' conclusion that power over spaces in schools is constantly negotiated and negotiable is particularly pertinent to this study which proposes to create a new space for reading in the primary school classroom.

2.3.6.4 The spatio-temporal discipline of the body in the classroom: *carpet time*

"Seeing the familiar as unknown and the everyday as problematic is part of the process of uncovering the overlooked and hitherto forgotten contexts of education." (Burke, 2005, p. 492). Two studies by McCarter and Woolner (2011) and Harden (2012) examine familiar, everyday practices in school relating to time, the arrangement of spaces and the discipline of the body of the child in those spaces. Both studies address *carpet time* as an example of a familiar, every day, overlooked practice that needs to be seen afresh. *Carpet time* refers to the routine practice of seating a whole class on a designated space on the carpet of the primary classroom so that information may be transmitted from the teacher in her chair to the children on the floor.

McCarter and Woolner suggest that because carpet time has been so little researched, either academically or professionally, its historical and cultural context has become detached from its meaning or purpose (2011, p. 20). Even the use of the word *carpet* disguises the fact that children sit for long periods of time on the floor; the word *carpet* hinting at a softness that would not be implicit were the similarly meaningless phrase *floor time* to be substituted in its place. *Carpet time* emerged as a feature of the Literacy Hour, introduced in 1998 by the Department for Education and Employment (Beard, 2000; DfEE, 1998). Carpet time thus reflects a pedagogy that is culturally and historically situated in the UK. Sixteen years later, the practice of delivering lessons through timetabled carpet sessions is still recommended by the government of England. Area guidelines, known as Building Bulletin 103, issued jointly by the DfE/Education Funding Agency (EFA) in 2014 recommend

that a classroom for primary school pupils should have "free floor space, usually on a carpet area, for gathering the whole class together sitting on the floor, for teacher-led instruction, group discussion, literacy, numeracy, storytelling" (p. 16). The continued embedding of carpet time into the spatial arrangement of each classroom in England by the government can be viewed as a manifestation of organisational control over the body of the child through the spatial and temporal arrangement of the classroom and curriculum.

McCarter and Woolner interview children in one school to discover how they experience carpet time and discover that children

> found the carpet space too small as they were squashed and uncomfortable; they had to sit too near to the IWB [interactive white-board] so it was difficult to see; seated at the back they could not hear: seated at the front they got discomfort in their necks ... wanting to sit near something to lean against was recorded several times (p. 26).

Despite these complaints, the authors note that children are "generally very tolerant of their teachers' practice" (p. 30) and their discomfort goes unnoticed by the teacher or does not appear to disrupt an assumption by adults in general that children are comfortable sitting in a small space on the floor for long periods without postural support because their bodies are soft and malleable.

Harden's (2012) account of *carpet-time* clarifies the disciplinary regime in the classroom, which further explains why children do not complain to their teachers about their discomfort when sitting on the floor. A poster on a classroom wall of the school featured in Harden's study explicitly demands "'good sitting', 'good listening' and 'good looking'" (p. 88). Harden details how these expectations for postural compliance are manifested on the carpet: "the children were expected to sit with their backs straight, legs crossed, eyes on the teacher and when silence was required, a finger over their mouths" (ibid.). This disciplinary regulation of the body also extends to a regulation of expression, the repression of dissent

and, arguably, of emotion and physical discomfort can be an indication that other needs, such as emotional and social safety, are not being attended to.

Both studies of *carpet time* reveal a notable disparity between the adults' and children's perception of the spaces they occupy. In McCarter and Woolner's paper, teachers describe *carpet time* as a positive experience for them, viewing it as an opportunity to interact with children and observe their behaviour; to give them support and to chat informally with them (2011, p. 26). This is markedly at odds with views put forward by children who refer to the poor design of the space and its effects on them: "'(M)y arm aches when I have to put my hand up'; 'I get a headache from the light'" (p. 26). McCarter and Woolner note that when the findings were reported back to the teachers, one teacher in particular was shocked by the results and changed her practice accordingly. It appears that teachers may be unaware of the impact of bodily constraint and discomfort upon children and further such studies in this area would be valuable. The authors express the hope that other similar practices should also be open to questioning and challenge (p. 20). However, as Fisher (2004) asserts, the nature of space and place in the classroom appears to be "sub-conscious and passively perceived" and teachers continue to resist change about the nature of the classroom "unless it can be demonstrated that the physical learning environment can influence learning outcomes" (p. 37). *Carpet time* appears to be "sub-conscious and passively perceived", possibly because a lack of insight by teachers about the production of space in schools beyond accepted spatial-temporal practices and because children are encouraged to suppress their views about their personal comfort during lessons. *Carpet time* might thus be understood as "the automatization and disindividualisation of power" (Caluya, 2010, p. 625) as a feature of power presented by Foucault "in a certain concerted distribution of bodies, surfaces, lights, gazes; in an arrangement whose internal mechanisms produce the relation in which individuals are caught up" (ibid.).

I began this thesis by citing Edgerton et al., "[I]n assessing the impact of education, researchers have tended to focus on what is taught or how it is delivered. Limited attention has been paid to where pupils learn" (2011, p. 34)." In returning to the theme of under-researched aspects of the locations and sites where children learn in schools, these studies

by McCarter and Woolner and by Harden are exemplary because they not only pay attention to *where* pupils learn but also address what it means to be a child in such a space (Clark, 2010b, p. 173). Having attended to the designed qualities of sumptuously-appointed libraries for the expert reader at the start of section 2.3, I consider it equally valuable to consider spaces regularly occupied by children in schools that are uncomfortable, unsuitable or unpleasant that might impede reading or reading-related activities and to use this evidence to press for better provision for readers. Such spaces will be considered in the concluding section of the Literature Review (2.4) in which the standards and regulations for school buildings are investigated in relation to the adverse effects of poor standards of design upon learning in general and the beginner reader in particular.

2.4 School design, standards and regulations

Burke and Grosvenor (2008) regard the components of school design as indicative of how those who have governance over the school estate view education.

> Lighting, room shape, access to the outside and common spaces, for example, are reflections of contemporary thought about teaching and learning. They are not just technical solutions related to cost of supply but also to views about how teachers and learners in designed spaces should be supported to act, and to what end (p. 11).

In this part of the Literature Review, the standards and regulations for school buildings and the procurement of those buildings is discussed to illustrate their point. Although the standards and regulations for school buildings in England contribute to making school buildings universally safe for children and adults to occupy, they also reveal the priorities and philosophies of the government that determine them.

The standards and regulations for schools include fire regulations and specifications for air quality and for materials. Performance standards apply to acoustic and lighting design, ventilation and the sustainability of buildings through the Building Research Establishment

Environmental Assessment Method (BREEAM). Beyond these standards and regulations, however, children's lives are also affected by "decisions, activities and events that take place at some remove from their own perceptual fields" such as national and international policymaking arenas (Ansell, 2009, p. 20-1). While children as young as two might be able to transform their perceptual space (Gallacher 2005), many decisions are made at a national level about the qualities of the spaces that all children inhabit without their knowledge, assent or contribution. The following section reviews the literature of school design that relates to these decisions, regulations, policies and standards that may directly or indirectly impact on young readers in school but that are beyond their perceptual fields.

Acoustic design has been singled out for special attention in this thesis, see 2.4.3, because reading demands a high level of concentration that is especially vulnerable to interruption and noise. The case for having an acoustically secluded space in which beginner readers can practise reading is presented in the context of two types of space in schools: teaching and non-teaching spaces. These two types of space are designed and built to different standards from each other, with non-teaching spaces having lower minimum performance standards with respect to acoustic design. I address the connection between hearing and reading and examine evidence that suggests that specific cohorts of beginner readers are disadvantaged by noisy conditions and poor acoustic design in schools. I begin this section, however, with a brief survey of the literature about the ventilation, lighting and area of the school building that is of relevance to design for beginner readers with the intention of making a connection between the macrocosm of school design and the microcosm of the individual reader's experience of learning to read in school.

2.4.1 A new method of school procurement

In January 2009, the leader of the Conservative opposition party David Cameron speaking at his party's Spring Forum, envisioned "an economy where government and citizens live within their means, save for a rainy day, waste not and want not." (Bale, 2016, p. 344). Cameron suggested that were his party to win the next election, an "age of austerity" would

be delivered by a "government of thrift" (ibid.). When the coalition government, led by Prime Minister Cameron, took office in May 2010, the transformational Building Schools for the Future (BSF) programme, which had aimed to rebuild or refurbish every secondary school in the country, was swiftly cancelled by the thrifty new Minister of State Gove, along with the primary school building programme.

The new administration increased its power of jurisdiction beyond the school curriculum and its management to reposition itself at the heart of school procurement in England as its own "strong, expert, intelligent client" (James, 2011, p. 58). The Education Funding Agency (EFA), now the EFSA, was established in 2012 to manage the funding to support state-provided education and as the central body for the delivery of new schools in the sector. With this "philosophical shift in approach" (James, 2011, p.6) the EFA created a new framework of baseline designs to deliver schools "faster and cheaper than those built under the previous school building initiative - Building Schools for the Future (BSF)" (DfE/EFA & Lord Nash, 2015). *The James Review* of capital investment in the school estate proposed that the cost of new school buildings could be cut by as much as 30 per cent. Proposals for how this could be achieved included organizing a bidding scheme; inviting building contractors to deliver batches of school buildings that would benefit from economies of scale and a new supply chain; the virtual elimination of the role of the architect as consultant with school staff and pupils and the death of the vision of student participation in school design (Parnell, 2015, p. 124); and a reduction in the area of new school buildings by 15 per cent for secondary and 5 per cent for primary schools.

While it is impossible to measure the impact of a programme of high investment upon the individual reader or of its subsequent cancellation, it may be possible to make a connection between the new standardised, baseline designs offered by the EFSA and the spaces available to the beginner reader in Year One for reading. If the area of a (new) school building is reduced, then teaching and non-teaching spaces will be reduced in size. Small-group rooms where children receive extra support with reading may be reduced in number as well as size; a decision that impacts directly on the availability of the rooms. Baseline designs recommended by the EFSA allow head teachers to decide where they want to make

reductions in the area of their new school building through various permutations including corridors, small-group rooms and classrooms. The choice to maintain the overall area of the school, however, is not an offer that is being made to stakeholders.

2.4.2 Aspects of design

UK Building regulations for schools require that buildings must be "structurally stable, constructed and fitted to ensure fire protection, adequately ventilated for people, and reasonably energy efficient" (DfE, 2017, p. 16) but these functional requirements are drafted broadly and other, supplementary documents are also issued to provide practical guidance.

Although I have highlighted individual aspects of design that may influence the health, comfort and safety of children in schools in this section, it is important to remember, as Woolner and Hall (2010) and Koutamanis and Majewski-Steijns (2011) point out, that there are often conflicting priorities in the real-world situation of the school. This means that improvement in one aspect of design may cause a deterioration in another, for example, soft furnishings and fittings, which decrease reverberation time may cause a fire hazard, collect dust and thus worsen air quality.

2.4.2 1 Ventilation

Regulation 6 of the *Workplace and School Premises Regulation*s states that "[e]ffective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air" (Health and Safety Executive, 2013, p. 17). It is arguable that if ventilation and air quality is poor within a school then this may cause young children to be more frequently absent due to increased incidents of respiratory infection. These children are, in turn, likely to be disadvantaged because poor attendance will lead them to miss reading lessons in schools. Since reading is currently taught programmatically,

i.e. through a staged programme of phonics tuition, then poor air quality in schools may at least indirectly influence young readers.

2.4.2.2 Lighting

Reading falls into the category of sight-mediated learning, which depends on light (Wall, 2015; Wall, Dockrell & Peacey, 2010). Wall's review of the literature of visual perception in the classroom outlines significant elements of visual perception, including "relationships between background luminance, target contrast, target size and a person's age" (Wall, 2015, p. 39). He notes that while large objects, such as desks and chairs, are processed relatively quickly even when light levels are low, small objects require greater discrimination and the processing of such objects is likely to be less successful. When reading, a poor contrast between text and the background of that text impairs visual processing even further, "affecting a range of needs, e.g. dyslexia" (ibid. p. 40).

Lighting also influences the atmosphere or mood of a space. The lighting level assists with the process of moving inwards, bringing the child both outwardly and inwardly into a different realm. Subdued lighting may promote calm, reflection and a sense of separation from a brightly-lit classroom for children when inside the nook, however a balance must be found an intimate, calming space and the provision of adequate light to read by.

2.4.2.3 Area guidelines

As suggested above in 2.4.1, if the area of school buildings is reduced to cut costs, it is likely that pupils will be affected, particularly those who receive extra tuition in small-group rooms and those with special needs who require a quiet, calming space for respite away from the sensory over-stimulation of the classroom. Koutamanis and Majewski-Steijns (2011) argue that "[c]oncerning performance we should not underestimate the importance of how a space is used" (p. 213) and that "[c]ramming too many pupils in a classroom has many adverse effects: the level of background noise increases, the concentration of user-generated pollutants, heat and humidity (occupant emissions) rise beyond what the design

of the building affords" (ibid.). Additionally, "overcrowding may result in pupils being squeezed against walls or teachers' desks and blackboards, zones that were intended as unoccupied space for circulation, visibility or climate control" (p. 214) and these are all issues that can have a direct effect on the reader. In June 2014, new area guidelines for mainstream schools were published by the Department for Education and Education Funding Agency as Building Bulletin 103 (DfE/EFA, 2014). These guidelines superseded those recommended by Building Bulletins 98 (DES, 2004) and 99 (DES, 2006), setting out a reduced area schedule for students between between the ages of 3 and 19.

2.4.3 Acoustic design in schools

Every reader can benefit from good acoustic design, since reading requires concentration and is vulnerable to interruption and noise. Beginner readers also require a good sound field so that speech is transmitted with clarity during phonics lessons. In setting out recommendations for the minimum performance standards for the acoustics in new and refurbished school buildings in Building bulletin 93, the DfE/EFA (2015) outlines the "*normal* means of demonstrating compliance with the Building Regulations" (p. 6, emphasis added). This document is intended to be read in conjunction with *Acoustics of schools: a design guide*, published jointly by the Institute of Acoustics and Association of Noise Consultants (2015). These Building Regulations, however, are not intended to cover the "acoustic conditions in administration and ancillary spaces not used for teaching and learning except where they affect conditions in neighbouring teaching and learning spaces" (p.9) even though in practice, these spaces may be used for teaching and learning. Building Bulletin 93 also stipulates that "acoustic conditions and sound insulation of each room or other space must be suitable, having regard to the nature of the activities which *normally* take place therein" (ibid. emphasis added). This information is significant because while regulations cover the activities that normally take place in certain types of spaces, these regulations are not designed to account for activities that would not normally take place. For example, while dining halls might normally be used for eating and possibly for drama, dance or gym, one would not expect reading instruction to normally take place in them. Furthermore,

people occupying reverberant rooms like dining rooms often compensate for the increase in reverberant noise levels by raising the level of their voices to make themselves heard and this may exacerbate the situation further. This phenomenon is known as *The Lombard Effect* (Institute of Acoustics/Acoustics & Noise consultants, 2015, p.41).

Acoustics of schools: a design guide (2015) refers to teaching spaces, non-teaching rooms and circulation spaces (p. 39) while Building Bulletin 93 refers specifically to non-teaching spaces (p. 9) in schools. These spaces are of significance in my study because I am as interested in the qualities of alternative spaces where readers read beyond the classroom, which often fall into the category of non-teaching spaces, as I am in the teaching spaces of the classroom itself.

In a presentation given to the Society for Public Architecture, Construction, Engineering and Surveying on 19th June 2015, Richard Daniels and Beech Williamson from the EFA discussed standardized approaches and solutions for school buildings including lighting and acoustics (2015). Although standardized methods are under discussion here, school buildings in England are far from homogenous, having been constructed in many different eras over the past two centuries in line with the needs, means, fashions and requirements of the age, the location and the client. In an interview with Williamson on November 3rd 2015, he told me that once the total area for teaching in schools had become a recommendation rather than statutory allowance, he and his colleagues at the EFA began to advocate a similar range of options for non-teaching areas and circulation, promoting the emergence of standards for both types of area. The existence of regulations for designated teaching and non-teaching areas implies that teaching and learning should not take place in non-teaching areas where the delivery of knowledge depends upon good acoustic design. However, as Koutamanis and Majewski-Steijns (2011, p. 215) point out, the affordances of building elements and of spaces are very different, so while an element such as a door is a recognizable product with a limited range of affordances in its location, spatial affordances "involve the mapping of more complex, dynamic and variable patterns of use and interaction" (ibid.). This means that the dynamics of spatial affordances are "largely implicit" (ibid.) and liable to be interpreted in a variety of ways by users. I also suggest that while architects are familiar

with the concept of "teaching" and "non-teaching" spaces and with the implication that performance standards of the building will vary in these spaces, teaching staff may not be apprised of these differences and are also likely to follow more complex, dynamic and variable patterns of use and interaction (ibid.) than the designers of the building might anticipate. Consequently, non-teaching spaces may be acknowledged by teaching staff as convenient or available rather than unsuitable.

Wall comments that a feature of reverberant spaces is that "successive speech syllables blend into a continuous sound: distinguishing the orderly progression of speech is made more difficult" (2015, p. 44). Non-teaching spaces in schools permit more reverberation, i.e. the reflection and scattering of sound, than teaching spaces. Building Bulletin 93 indicates that the upper limit for indoor ambient noise levels in a new-build primary classroom or SEN calming room is 35 decibels (2015, p. 19), while the upper limit for atria and circulation spaces used by students and for a dining room is 45 decibels. Consequently, in a large, reverberant space, such as an unoccupied dining or assembly hall, distinguishing successive speech syllables, a prerequisite of phonics lessons, is likely to be more challenging for the beginner reader. Additionally, noise interruptions are likely to be magnified by the reverberant acoustics, making tasks that require concentration more liable to be disturbed by such interruptions.

Classrooms, by virtue of a multiplicity of communicative exchanges, are necessarily noisy (Wall, 2014, p. 43) and in multilingual cultures, the impact of excessive classroom noise levels is substantial (Nelson and Soli, 2000). If regulations have been adhered to, then the teacher's speech should not be distorted by the overlaying of reflected sound waves (Perkins & Bordwell, 2010, p. 209). Sound-absorbing materials or treatments are likely to be used to reduce noise levels and create acoustic barriers between adjacent spaces.

In 2000, Nelson and Soli demonstrated through field measurements in classrooms in the US that the standards for successful speech understanding were not being met due to noise from heating, ventilation and air conditioning (HVAC). Even though classrooms have higher standards for acoustic design than non-teaching spaces, it is difficult to ascertain whether

these standards are being consistently met in new schools by contractors or properly evaluated once the school is in use. Klatte, Bergstrom and Lachmann (2013) argue that many classrooms fail to meet the needs of young listeners, while a study of thirty-two Ohio classrooms by Feth and Whitelaw (1999) found that the acoustics of only two of these classrooms met the standards required by the American Speech-Language-Hearing Association (ASHA) while many of the others tested were sufficiently poor to make listening and learning difficult for children. Meanwhile, Sala and Rantala (2016) discovered in their study of 40 classrooms in 14 different Finnish schools that only a small proportion of these classrooms met the acoustic criteria set out in the Finnish national standards for school acoustics and not one single classroom fulfilled the international criteria for the intelligibility of speech. Despite this finding, it is still almost certainly the case that even classrooms that fail to meet regulations will still have better acoustic design and provision than acoustically untreated spaces beyond the classroom.

Flaws in acoustic design are often difficult for the layperson to identify and rectify. While poor lighting design in schools may be improved by teaching staff with the addition of a desk lamp or set of well-fitted window blinds, the provision of a screen or partition is likely to have comparatively little effect on an acoustically poor space since, as Pallasmaa remarks, "vision is directional, whereas sound is omni-directional (2005, p. 25).

2.4.3 1 Noise and learning

Noise is unwanted sound. Woolner and Hall (2010) draw upon a wide range of data from a variety of disciplines including experimental, environmental and health psychology; education, design and architecture, building management and public health to review what is known about the negative impact of noise on pupils' learning. They classify the ways in which noise compromises learning into three broad categories, as noise intrusion from beyond the school into the school or from inside the school building into classrooms; as an insidious background noise from heating, ventilation or computers; and as noise generated during learning activities by students (p. 3258). Woolner and Hall conclude that problematic

noise has a direct, negative effect for learners in general by distracting or annoying them and upon language and reading development in particular (ibid., p. 3257). They also recognize that all children have "more difficulty performing cognitive tasks when it is noisy" (p. 3258) and that long-term learning may be undermined because memory and recall are affected by noise.

There is evidence to suggest that young children show a greater susceptibility to the negative effects of noise when learning than older children and adults (Elliott 2002) and that very young children in the early years of primary school may be even less able to adequately hear and understand speech in class (Nelson & Soli, 2000). Researchers working in secondary education note that children under the age of 13-15 are also more likely to be disadvantaged by noisy conditions (Flagg-Williams, Rubin & Aquino-Russell, 2011). Klatte et al. (2013) offer two explanations for why this might be the case, firstly that children need better listening conditions to decode and process oral information than adults and secondly, that children are more susceptible to "sound-induced distraction due to limited attentional control" (p. 3). Klatte et al. also suggest that first graders in the US model of education, i.e. children who are one year older than the cohort of Year One children who were involved in my research study, may be more susceptible to distraction by a mixture of nonverbal classroom sounds, unlike older children and adults. This evidence suggests that the younger the child, the more likely they are to be adversely affected by noise when learning.

There is also strong evidence to suggest that children for whom English is not a first language are likely to be disadvantaged by unfavourable acoustic environments (Nelson, Kohnert, Sabur & Shaw, 2005; Mayo, Florentine & Buus, 1997; Crandell & Smaldino, 1996). This would account for more than 50 per cent of pupils in three of the seven schools in which I conducted my fieldwork.

Unsurprisingly, children with hearing loss or impairments are particularly disadvantaged by problematic noise in reverberant classrooms and other learning spaces and while poor listening conditions may have a negative impact upon the learning of any child, they affect

those with auditory disorders more significantly (Nelson and Soli, 2000; Bradlow, Kraus & Hayes, 2003). However, it is surprising to discover quite how many children of school-age have auditory disorders that are likely to put them at a disadvantage when learning (Nelson & Soli, 2000). Bess, Dodd-Murphy and Parker (1998), who research in the US, suggest that number to be 11.3 per cent; Shield and Dockrell (2003, p. 99) cite research by Nelson (2003) and by Niskar et al. (1998) contending that "at any one time up to 40 per cent of children in a primary school class in the UK or USA may have some form of hearing impairment." Manlove, Frank and Vernon-Feagans (2001) estimate that a temporary but prolonged hearing loss is typical of about 50 per cent of *pre-school* age children in childcare. Even though the children studied in my own research, aged five and six and of school-age in England, may not necessarily be prone to such a high incidence of hearing loss, Manlove et al. also suggest that following an ear infection in very young children, fluid may be present in the ear for nine months after the infection has cleared up and that children may show no sign of having an infection but still have difficulty in hearing (Manlove, Frank and Vernon-Feagans, 2001). Consequently, one of the objectives of the design research element of this doctoral research is to ensure that the acoustic standards of the designed artefact that emerges from the research make it inclusive for every child.

2.4.3.2 Inclusive acoustic design for children with autism

Children with special educational needs may be further disadvantaged by noisy environments (Shield & Dockrell, 2003; Ljung, Israelsson & Hygge, 2013; Wall, 2015). The highest proportion of children in mainstream education with a statement, i.e. a formal document outlining their special educational needs and the help that they will be given, are children with autism. In 2015, just over a quarter of children with a statement had this type of need and children with a statement of special educational needs accounted for 2.8 per cent of the pupil population in England in 2015 (DfE, 2016). This means that more than 59,000 children in England were identified as having significant educational needs due to an autistic spectrum condition: a significant number of children, warranting care and attention to their needs in relation to the design of schools and classrooms.

People with autism are highly sensitive to unwanted noise and when asked about their priorities for school design in a study by McAllister and Sloan, children with autism emphasized their need for quiet withdrawal spaces that could be easily accessed by them (2016). A survey of parents and carers of 100 children with autism ranked acoustic design as the most significant feature of the sensory environment (Mostafa, 2014). Mostafa (2008) recommends that a "baseline neutral sensory" *escape space* (p. 205) should be designed in learning spaces as "a haven for times of sensory imbalance" (p. 194). If children with autism are to be included in all aspects of learning in the mainstream primary school, the opportunity should be taken to consider how to design acoustics with them in mind rather than merely adhering to minimum standards and regulations. Inadequate provision for dealing with unwanted noise can prevent pupils with special needs from engaging in all aspects of school life (McAllister & Sloan, 2016) and, since the majority of children and young people with autism are currently educated in mainstream schools, (The National Autistic Society, 2015) more must be done to ensure that acoustic standards are high enough to ensure that they are well-provided for in this sector. Research into the connection between acoustic design in schools and special needs has taken far too long to be recognised as significant and only in the past decade has the government in England advised on their website that "[p]upils with special educational needs are generally even more sensitive to the acoustic environment than others" (DfE/EFA 2015, p. 15).

2.4.3.3 Noise and reading

Research into the possible detrimental effects of unwanted noise upon early readers first began to emerge nearly four decades ago and has continued to accumulate (Bronzaft, 1981; Bronzaft and McCarthy, 1975; Evans & Maxwell, 1997; Klatte, Bergström & Lachman, 2013; Maxwell & Evans, 2000; Shield and Dockrell, 2008). The consensus amongst researchers in the fields of acoustics, deaf studies and hearing loss that chronic, noisy conditions have direct, negative effects on learning in schools means that attention to the delivery of good speech intelligibility is of paramount importance for the transmission of information from teacher to student (Woolner & Hall, 2010; Stansfeld & Matheson, 2003). Nelson and Soli

(2000) suggest that there are children in every class, particularly in the early years, who have poor hearing and that this has a significant impact on learning to read. The delivery of a phonics programme for reading, in which intelligibility is crucial, relies upon good acoustic design of the spaces in which phonics teaching takes place.

Flagg-Williams, Rubin and Aquino-Russell (2011) emphasize the importance of speech intelligibility alongside audibility when learning to read. Distinguishing between high-frequency sounds, such as '/th/, /f/, and /s/ "that make each word distinct" and lower frequency sounds, such as the vowels "that 'carry the power or audibility of the message" can be difficult in environments with poor acoustics (p. 89). The authors concur with Flexer (2005) that high-frequency sounds can be masked by a noisy environment, which may result in spoken messages that while audible, are unintelligible, which means that pupils may not understand what they are hearing (Flagg-Williams et al., 2011, p. 89). Additionally, when background noise is high, the effort required by pupils to distinguish between sounds results in a reduced capacity to process and comprehend the meaning of those spoken messages (Picard & Bradley, 2001). To conclude, good acoustic design for speech intelligibility is vital for the teaching of reading, particularly because many children have an intermittent or permanent hearing loss that is undiagnosed. Schools risk failing to be fully inclusive when acoustic design is poor. Children with special educational needs or for whom English is not their first language can be significantly disadvantaged by poor acoustic design when learning to read.

2.5 Conclusion

In Chapter Two, literature exploring some of the physical, sensory and emotional needs of the reader when learning to read in school was compiled. In contrast with the expert reader, who can cocoon themselves in the protection of the text even in some quite challenging circumstances, the young beginner reader is particularly vulnerable to interruption and distraction and benefits from seclusion, physical comfort and quiet when reading. This body of research informs how the study will address Research question 1

about where beginner readers read in school. Having drawn upon the work of Merleau-Ponty and McLaughlin to make the argument that the body of the reader shapes the spaces in which they read and are shaped by those spaces, the qualities of spaces where novice and expert readers read are examined as a potential basis for the design of the reading nook. These are supplemented by examples of spaces in schools, which although not designed specifically for reading, prioritize the physical, sensory and emotional needs of children. In the final part of the chapter, an explicit link was made between the beginner reader and the national system of school procurement so that the consequences of decisions made about the standards for and areas of school building can be viewed in the context of an individual reader in school. This informed the design process undertaken to address Research question 2: "Where could beginner readers read in school?" to propose an alternative space designed specifically for the beginner reader.

Chapter Three: Methodology

I use this chapter to account for the use of Fällman's model in organizing three phases of research. These are delineated chronologically with reference to the two overarching research questions established at the outset of the study and the four subsidiary questions that emerged during phase two. The chapter begins with a discussion of how my own phenomenological attitude towards reading and design leads me to regard the nature of the new knowledge generated. I then offer an overview of design as a discipline in which I locate Fällman's model. Ethical considerations are woven into a discussion of the research methods used in 3.5.2, and a discrete section concerning the research ethics of the study in general are outlined in 3.7, concluding the chapter.

3.1 A design-oriented research methodology

In this thesis, I contend that the introduction of a design methodology to the field of education can challenge the spatial practices and arrangements that are habitually regarded by researchers, educators and architects as normal or neutral. The genesis of the conceptual model by Fällman that frames this study emerges in his doctoral dissertation (2003) in which he distinguishes between two approaches to research and design that may initially appear to be confusing or contradictory: "Design-oriented Research" and "Research-oriented Design" (p. 78). Fällman, whose research is intended to clarify inconsistencies and misapprehensions about the relationship between research and design specifically within the field of HCI, continues to refine the distinctions between the two in two subsequent papers (2007, 2008) and it is the latter, *The interaction design research triangle of design practice, design studies, and design exploration*, that has been appropriated for this study to separate out but also then to bring together three crucial elements of design research identified in his paper.

I take the time here to clarify the particular design research methodology employed in this study because design is relatively youthful as an academic discipline, the first doctorate in design having been awarded in the 1960s, and questions of how design should be positioned in relation to academic research still trouble the field (van de Weijer, Van Cleempoel & Heynen, 2014), a field that Kimbell describes as "fragmented" (2011, p. 290) and "undertheorized and understudied" (p. 301). The question of how doctoral research about design should be presented and assessed within the academy also remains unresolved (Frayling 1993; Durling, 2002; Yee 2010).

Fällman suggests that although his own field of HCI is "forgetful" (2003, p. 98) of the distinction between "Design-oriented Research" and "Research-oriented Design" (ibid., p. 78), it is as simple to grasp as the distinction between academic research and commercial design. "Design-oriented Research" is a particularly appropriate term to describe the methodology employed in this study by an academic researcher undertaking a doctoral project with a strong design element. This approach also allows me to step away from the well-trodden paths of school design that seek to quantify the relationship between the school building and success in academic attainment by pupils. Design-oriented Research, as stated by Fällman, must strive to reveal "new knowledge of some sort" (2003, p. 99). With respect to my own study, this *new knowledge* centres upon the sites and locations where beginner readers read in schools; the qualities and affordances of those spaces and whether those spaces offer sufficient support to beginner readers. This knowledge is then developed by the process of bringing the nook "into being" (ibid.) but, as Fällman stipulates, the artifact is always a means to an end rather than an end in itself. This understanding of the nook as a means to an end will be reflected in my conclusions and recommendations. Research-oriented Design, by contrast, is antithetical to this approach, in which the nook would be viewed as a commercial product rather than a tool with which to create research outcomes.

My only disagreement with Fällman's valuable clarification of these two terms is that although the definition of each is clear and precise, the names with which he labels each one can easily be confused. This may be why such a potentially beneficial insight by Fällman

has not been more widely adopted beyond the field. To match the label to the meaning, it is helpful to focus on the noun that completes each phrase and that signals the ultimate goal of each approach.

N.B. In this thesis I adopt the English spelling of the word artefact unless cited from an article in which the American spelling, *artifact*, is used.

3.2 Precedents for a triadic model of design research

Frequently-cited precedents for a tripartite understanding of design and research in academic study come from Frayling (1993), Bruce Archer (1995) and Cross (1999). Frayling's triad consists of "Research into art and design"; "Research through art and design" and "Research of art and design" (p. 6). Bruce Archer's triadic model is similar but its three elements are more clearly defined as "research about practice" i.e. the study of the history of design and/or the materials, processes and methodologies of design; "research for the purposes of practitioner activity", which aims to extract and communicate the research that is contained by a piece of design or design artefact and thirdly, "research activity carried out through the medium of practitioner activity", relating to "the construction or enactment of something with the aim of shedding light upon a proposition, principle, material, process or function (1995, pp. 11-12). Yee helpfully interprets this last mode of research in Bruce Archer's model as -- "research through practice" -- defining it as research where "design practice is the vehicle for research, and a means to communicate the result" (2010, p. 3). This is a particularly apt description of my own research project; where the nook artefact is both a research tool and a means of communicating the outcomes of the research.

Frayling's suggestion for a triad is loosely based upon Read's 1944 premise of research *for* art rather than *into* or *through* art (Frayling, 1993, p. 2) and is propositional rather than than well-defined. Despite this, it is often cited as a methodology in the field. Bruce Archer's descriptors of the three elements are less memorable than Frayling's, despite the comparative sketchiness of Frayling's approach, and this may account for the popularity of Frayling's triad over Bruce Archer's.

Cross, who is cited by Fällman as influential to his own work, identifies three areas where "design knowledge" (1999, p. 6) resides: in people; in processes and in products. Cross suggests a taxonomy of "the field of design research" (ibid.) based on these three categories: "design epistemology as a study of designerly ways of knowing; design praxiology as a study of the practices and processes of design and design phenomenology: a study of the form and configuration of artifacts" (ibid).

Cross's model relies too heavily upon the embodiment and the craft of design to be used as a conceptual model for this study, but his alertness to the significance of tacit knowledge has informed my observations of the design process at SCABAL, just as Fällman's has informed my understanding of SCABAL's commercial imperative in their co-design of the nook. Cross's model is textual rather than representational, unlike another model that I considered using to frame this project, by van de Weijer, Van Cleempoel and Heynen's framework (2014) that positions practices of research and design in relation to each other.
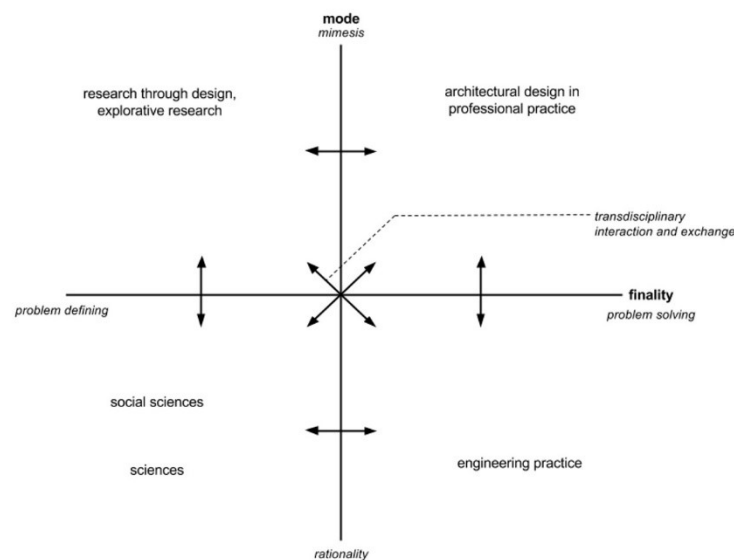
Figure 3.1: A conceptual model for design research
(van de Weijer, Van Cleempoel and Heynen, 2014, p.23)

Here, the relationship between design and research is represented as a "a constellation subdivided by two axes" (pp. 22-23), producing four quadrants, representing "research

through design"; "architectural design in professional practice"; "engineering practice"; and "social sciences" (p. 17). The horizontal axis extends from defining to problem solving, while the vertical axis stretches between rationality to mimesis. This model is suggested within the context of architectural design context, which is closer to my own area of study than HCI but lacks the clarity of Fällman's model and the robustness of form found in the triangle.

3.3 Using Fällman's framework
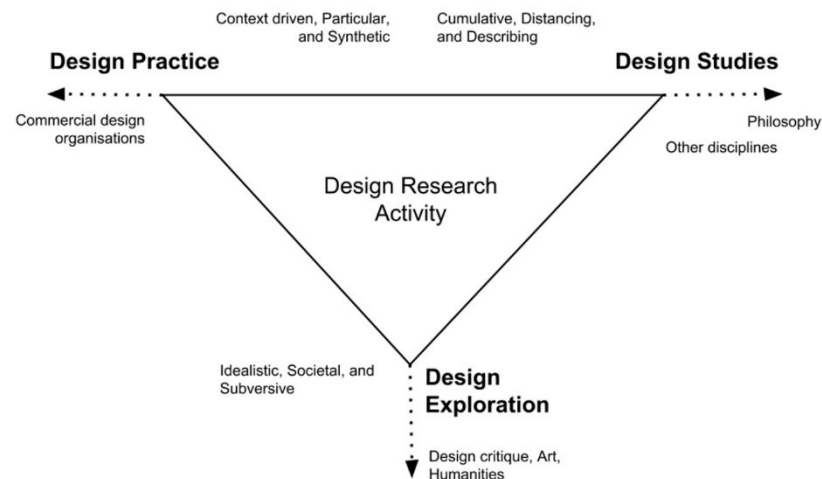
Figure 3.2: The Interaction Design Research Triangle
of Design Practice, Design Studies and Design Exploration
(adapted from Fällman, 2008, p.5)

Fällman's 2008 paper *The Interaction Design Research Triangle of Design Practice, Design Studies, and Design Exploration* introduces a dialogic, relational and hermeneutic framework, specifically intended to guide doctoral students through research projects. Created in collaboration with Fällman's colleagues at the Umeå Institute of Design in Sweden, the framework reflects the complexity and interactive nature of a design situation without resorting to a dominant metaphor of "problem solving" (Coyne & Snodgrass, 1995; Jahnke 2012).

The triangular framework has three elements or activities: design studies; design practice and design exploration. In the most basic model of the framework, the researcher moves between two vertices at any one time. Fällman specifies that a research question must be integrated into the framework and that a designed artefact must emerge from it, so that the researcher gains experience in the practical, real-world elements of design.

The first element of the triangle is design studies, which equates to theoretical, academic research. The second is design practice and this "real-world" activity must confront questions of budget and time, of working with collaborators and communicating with stakeholders. The third element is design exploration or "what if?" and demands a societal contribution: an imaginative response to a wicked or intractable problem. (Buchanan, 1992; Coyne, 2005; Rittel & Webber, 1973)

Together, these three elements address the theoretical, imaginative and real-world driven modalities of research. When using the framework, Fällman encourages the researcher to drift between elements, making it a dynamic model of research. However, the triangular nature of the framework also helpfully limits research activities to two elements at once rather than all three, offering a separation between activities that naturally entwine, within a structure that shapes the management of the project but is also adaptable to its needs.

Two of the major challenges of this thesis, as with any multidisciplinary study, are coherence and consistency. Maintaining a single, simple narrative while careering through a variety of disciplines demands a consistent, coherent approach with respect to theoretical perspective, use of vocabulary and epistemology. Fällman applies a "design-oriented attitude to phenomenological practices" (2003, pp. 366-7), regarding phenomenology as "an attitude to research -- not a recipe." (p. 365). Inspired by the belief that "(t)rue philosophy consists in re-learning to look at the world" (Merleau-Ponty, 2002, p. xxiii), Fällman calls upon the researcher to question the "abstract, scientific view of the world—an objectivistic, disembodied view, where the world exists independently of ourselves and which as such only casually interacts with our experience" and to stop taking this worldview for granted (Fällman, 2003, pp. 27-8). This phenomenological perspective is consistent with my own, in

which a bodily, physical, sensory understanding of the reader and the spaces in which they read has provoked a re-evaluation of the cognitive-psychological perspective that currently dominates an understanding of what it means to be a beginner reader reading in school.

3.3.1 The three elements of Fällman's interaction design triangle

Fällman (2008) suggests that each of the three activities represented in the model are separated by "*tradition* and *perspective*" (p. 5) and can be viewed as if "using a different set of goggles" (p. 10). A brief outline of each of the three activities, "design practice"; "design studies"; and "design exploration", follows here to situate the methodology (ibid., p. 5).

3.3.1.1 Design practice

Fällman advocates that doctoral researchers should experience the practice of design during their studies so that they can improve their ability to engage with experienced designers and develop an understanding of the "tacit knowledge and competencies that are involved in the discussions and critiques that eventually lead up to a final artifact" (p. 6). Tacit knowledge is the "unspoken or unknown components" of design (Mareis, 2012, p. 65) expressed by Polanyi as "we can know more, than we can tell" (Polanyi, 1983, p. 4).

Not only does this element of the triangle expose the researcher to the "nitty-gritty" of commercial practice, it also allows them to design something "hands-on" (Fällman, 2008, p. 6). This component of Fällman's model encouraged me to bring my initial idea of creating an alternative space for reading, the nook, to the doctoral collaboration with the intention of committing to a level of participation that would be "unobtainable by an outside observer" (ibid). The doctoral collaboration was considerably enlivened and enriched by this design practice element as a consequence of this decision.

3.3.1.2 Design studies

Design studies, as an "interface towards academia" (p. 18) does not confine itself to the literature of design but draws on other paradigms, fields and concepts that inform the design intentions of a project. In this study, descriptions of concrete locations were extracted from academic texts and these influenced the design of the nook. They included the Medd-designed welfare room (Clark, 2010a) and the geography store cupboard used for interviews in a research project (Jones, 2008). This area of activity is "*cumulative*", "seeks the *general* rather than particular" and "aims to *describe* and *understand* rather than create and change" (Fällman 2008, p. 9, original emphasis), giving it a similar status and character to a literature review.

3.3.1.3 Design exploration

Fällman's own distinction between design practice and design exploration is particularly useful because these two elements may initially appear to be similar and thus easily confused. While design practice "tends to emphasize the role of the client and various business goals" (p. 14), i.e. it is led by a client and market-driven, the typical client of design exploration is "the researcher's own agenda" and the research project is "self-initiated" (p. 7). The resulting design or artefact may consist of a provocative or conceptual statement, emphasizing "possible" or "ideal" qualities rather than commercial ones and this element of the triangle is experimental in the sense that it explores possibilities "outside of current paradigms" (p. 7). The exploratory phases of the research process may also result in "an artifact that often in itself, without overhead explanations, becomes a statement or a contribution to an ongoing societal discussion" (p. 8). The nook artefact, developed in line with this activity, contributes to the ongoing societal discussion about the spatial practices in schools.

3.4 The doctoral collaboration: aims and objectives

Once the doctoral collaborative project was underway, I formulated three research objectives for the collaboration, building on those set by the academic and commercial partners that I outlined in section 1.5:

1. To design a discrete, secluded space in which beginner readers could read in school.

2. To identify, adapt and develop a design framework with which to structure a "Design-oriented research" project (Fällman, 2003, p. 78).

3. To share experience and expertise with the architect and design team throughout the duration of the collaborative project and to disseminate this research widely through publications, an academic blog and presentations at seminars.

Two overarching research questions emerged during the first three months of the project:

1. Where could beginner readers read in schools?
2. Where do beginner readers read in schools?

These questions, contextualized by the research objectives, guided three phases of research activity.
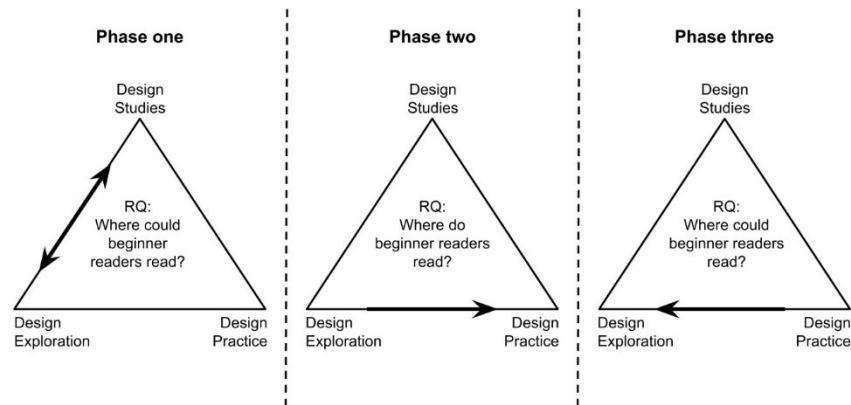
Figure 3.3: Research questions relating to each phase of the study

Phase one addressed the question of where beginner readers *could* read in school through the design of an acoustically-secluded artefact, the nook. An extensive review of the relevant literature, as detailed in Chapter Two, informed the design, which was completed prior to the second phase of research.

Phase two addressed the question of where beginner readers read in school through empirical research in seven primary schools in England. Having already made a first design of the nook in the form of drawings and models, this phase of the research also allowed me to assess whether the nook would be a viable proposition in these schools and to compare it with designs for reading made or commissioned by teachers.

Phase three returned to the question of where readers *could* read in school by proposing a redesigned nook, informed by the research in schools. At this point, a decision was made to create a design that responded to the constraints of space observed in at least one of the schools so that the nook design would be, as far as possible, available to all schools rather than only to those with the most spacious buildings.

3.5 Research methods

Using Fällman's (2008) framework

Research process (activities)

Artefact development

Phase 1

Design Studies

Design Exploration — Design Practice

Literature review / analysis

Artefact development

• Identifying theoretical perspectives
• Developing a new (physical) paradigm for reading
• Investigating architectural precedents
• Reviewing relevant literatures and policy documents

• Writing a brief
• Communicating through drawing
• Developing 2-d plans and conceptual models of the artefact

Iterative design

design brief

nook v. 1

Phase 2

Design Studies

Design Exploration — Design Practice

Data generation

Data analysis

Visiting schools/ generating data:
• Child led tours
• Interviews with staff
• Measurement of spaces
• Image generation
• School profiles
• Examples of teacher design

Data analysis:
• Who reads where?
• A taxonomy of reading spaces in schools
• Features and qualities of teacher-designed reading spaces
Viabillity of nook 1 in researched schools
• Staff and children's opinions about reading and reading spaces

nook v. 1 comparison and evaluation

Phase 3

Design Studies

Design Exploration — Design Practice

Data synthesis

Artefact redesign

Data synthesis:
• Critical conversations with the architect and design team reflecting upon examples/ context
• Challenging the design & critiquing the features of nook v. 1

Designing nook v. 2
• Model making
• Assessing new materials
• Introduction of new industrial partner (Jenx)
• Assessing safety standards

nook v. 1

Iterative redesign

data synthesis

nook v. 2

Phase 4
Post-phd study

Nook v. 2 made by Jenx and installed in two schools for a further research study.

Figure 3.4: The research process

Figure 3.4 provides a broad outline of the research process. In the following section, I reveal the path that I took while using the framework, describe the methods employed and comment upon how I perceived my changing role in each of the phases.

3.5.1 Phase one: design studies and design exploration

Design studies, conceived as an "interface towards academia" (Fällman, 2008, p. 18), does not confine itself to the literature of design but may draw on other paradigms, fields and concepts that inform the design intentions. This area of activity is "*cumulative*", "seeks the *general* rather than particular" and "aims to *describe* and *understand* rather than create and change" (p. 9, original emphasis).

In the first phase of this doctoral study, the design studies element was fulfilled through the retrieval and compilation of diverse literatures including children's geographies, architectural studies, educational and child psychology and the history of education. These literatures provided instances of qualities and attributes of spaces where readers read and of spaces where children retreat and find respite from the school routine. Non-academic policy documents and reports about the reading curriculum and the procurement of and regulations for school buildings, detailed in the second chapter of the thesis, also contributed to the design studies element of the research. My theoretical perspective, bringing together a phenomenological understanding of architecture and a bodily, sensory approach to reading as described in section 2.2, informed my reading of these literatures.

In the original, unpublished research funding document for the AHRC scholarship compiled by Dr. Burke and Mr. Cullinan in 2013, a proposed methodology was agreed upon by them, "drawing from the best of architectural practice including brief development, drawing, making plans and models as well as academic scholarship." These first three research methods, i.e. brief development, drawing and making plans and models, were the elements of design exploration that I developed in phase one of the study. Rather than academic scholarship being additional to these methods however, the design studies element of the

framework was fully integrated with design exploration in phase one. This created a more holistic model for the research as suggested by Fällman's framework and transformed the design studies element into a fundamental component of the research process rather than, as implied by the original funding document, an afterthought to a design process.

Communication was an essential component of each of the three research methods used during phase one. Having initially positioned myself as a doctoral researcher, throughout this phase of research I also took on the role of client in the design process so that I could develop a brief to communicate the academic research through a medium that was familiar to the architect. His suggestion of developing a design brief as a single document (Appendix A) allowed me to present elements of this research to him at the outset of the design exploration process. Having a design brief and working with Fällman's triangular model also meant that an artefact was regarded as an outcome by Dr. Burke, Mr. Cullinan and myself from an early stage in the process even though it was not initially clear whether this would eventually be realized as a physical object to scale or a series of 2-d plans.

Ideas arising from the brief were discussed in detail through using drawing and conversation to create a series of imaginative responses to the brief, see figures 3.5 and 3.6. During this first phase, drawings and sketches emphasized idealized, exploratory representations of the nook whereas the practicalities of assembly, installation and the financing of a prototype nook and its commercial applications were put to one side. Once a final drawing was agreed upon, a computer aided design programme (CAD) was used by the design team to support the process of making a two-dimensional model of the nook.

3.5.1.1 The development of a design brief

Once it had been established that Fallman's framework would be used as a model for this doctoral study, the design of an artefact was planned as a final outcome of the research in addition to the thesis. The development of a design brief was the first stage in this design process. The architect requested that the brief should take the form of a short, easily-

digestible document to communicate my ideas about the project to him. He suggested four headings:

1. a one-sentence summary or 'elevator pitch' for the proposed artefact;
2. 'the problem' that the artefact would 'solve;
3. performance specifications i.e. proposed qualities and attributes of the artefact;
4. contextual examples and precedents.

This document was composed in February 2014 and is reproduced in full without amendments as Appendix A.

During the first term of my doctoral studies, I focused primarily on the design studies aspect of the framework. In term two, the move towards the exploratory, imaginative element of the framework marked the beginning of the collaborative element of the doctorate.

The design brief fulfilled two general functions. The first was to establish a shared language between myself as a teacher and the architects and to communicate our own professional expertise to each other clearly without resorting to jargon. The second purpose of the brief was to communicate to the architects a sense of the pedagogies, routines and practices currently existing in state primary schools, drawing upon my own professional experience as a teacher. It became clear to me from spending time at SCABAL that the architect was looking back upon his own experiences of school, in the private sector thirty years ago, to guide in his designs and that he was often influenced by that particular model of education. National policies for education change frequently, however, and I wanted to convey a sense of some of the issues around the current, daily practice of reading for Year One pupils and teaching staff in state schools.

The brief, therefore, fulfilled a useful role as a communication tool and jump-started an engagement with the architects that continued to develop fruitfully throughout the development of the nook design. It also allowed the architects to work with me in a way that was within their own comfort zone and for them to position me during this phase as

their client rather than as an academic researcher. Looking back at the document having completed my doctoral research I also appreciate that it represents a snapshot of my own knowledge of architecture and design and also of reading and reading spaces during a specific period, i.e. during the second term of my doctorate. I am struck by my use of language and its reflection of my understanding of reading as a reading recovery teacher who had been schooled in a cognitive-psychological approach to reading. This is reflected in my use of phrases such as "struggling readers" and my description of reading as "a skill to be acquired": not a phrase that I would use now having deeply researched many different paradigms of reading (see 2.1).

I regret that this was the only time that the architect and I used brief development to communicate our current ideas since this method could have charted significant steps forward in the collaborative process. Instead, once this document had been written by me and read by the architect it was deemed to have served its purpose and was not referred to again. No further design briefs were written and my role as a client of the architect began to change back to a less clearly defined one of researcher-teacher.

Further comments about the design brief follow. These are numbered according to the four headings of the brief and the items in the performance specifications table (3), see Appendix A for the original document.

1. Summary: at this point in time the artefact, which eventually became known as the nook, did not have a name and was referred to in the summary as a "space", although the word "pod" was sometimes used as a working title.

2. The problem: the architect saw the nook as a solution to a problem. Although I did not and do not concur with him that there is a single problematic feature of learning to read in Year One of the primary school that could be 'solved' through design, I approached his request as an exercise in communicating the nature of learning to read in schools rather than a reductive framing of reading, or as readers as a problem to be solved.

3. Performance specifications: I asked the architect for guidance about what he might expect to see in this section of the brief and was given the following suggestions: scale, dimensions, temperature, acoustics, materials and lighting. I added several more items to this list as I developed the brief. These were as follows:

> i) decoration: in recognition of the importance that teachers often place upon the decor of their book corners and role-play areas.
>
> ii) furniture: as an important aspect of physical comfort inside the artefact.
>
> iii) location: as I considered whether the nook should be placed inside or outside of a classroom setting

To these category headings, I also added two abstract terms that I felt might be useful when considering the atmospheres and qualities of designed spaces for reading, also see 2.2.5:

> iv) requirements implicit in the use of specialist vocabulary: to define terms, discuss uses of space and explore the possibilities of the design without restrictions
>
> v) atmospheres and spaces that are communicated through children's literature: the imaginative, liminal aspects of children's books.

4. Precedents: images of precedents for the design artefact were also collected to show to the architect. Koutamanis and Majewski-Steijns (2011) suggest that these are generally "partial and elliptical, i.e. a design can be based on several precedents without fear of conflict or inconsistency" and "can be derived from the same use type" or from unrelated ones (p. 219). This is also the case with respect to points iv and v above.

5. Timetable: this was added in recognition of the significance of daily routines in the classroom as well as spatial practices. This timetable had been originally compiled as part of a professional observation I made while employed as a specialist reading

teacher in February 2013 in an East London primary school prior to the start of my doctoral research.

3.5.1.2 Communication through drawing

The value of drawing as epistemic practice in architectural design is contemplated by Bovelet (2010) in a special issue of the architectural theory journal *Footprint* about Drawing Theory. Bovelet conceives of drawings as "operational pictures" that "do not primarily present something through a resemblance to that which they are referring to, but rather represent something in order to take it into a discursive space through visual operationalization" (p. 81). Bovelet is clear that drawing is not merely illustrative and "does not consist of illustrating a genuine - and non-drawn - knowledge, but of producing genuine epistemic objects that can become the target of arguments and, eventually, objects of knowledge by way of conventional consolidation" (ibid.) He reminds us that drawings can be wrong, using the word "arguments", regarding drawings as propositional. Bovelet's evaluation of the value of drawing as a method of establishing discursive space encapsulates the process of communication between myself and the architect during this phase, so that a more formal design could emerge from our conversations or "arguments" (ibid.).

SEDAN CHAIR.

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← Kite play
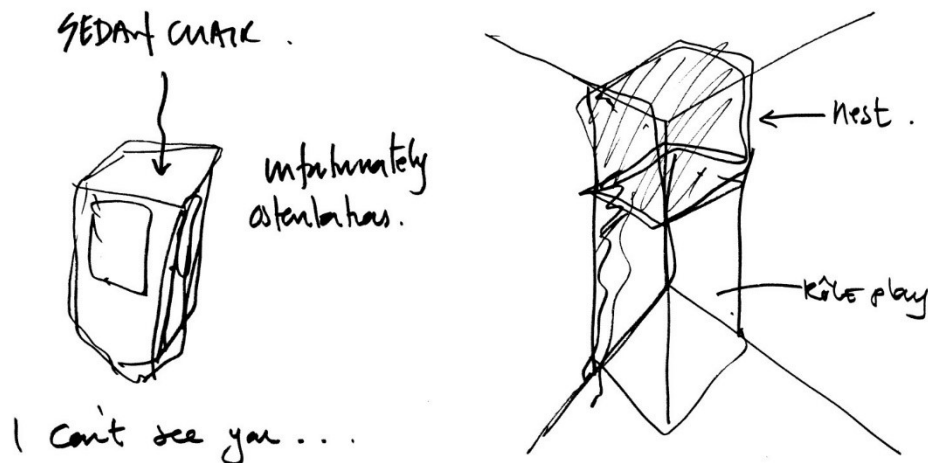
Figure 3.5: Sketches by the architect that functioned as "operational pictures" (Bovelet, 2010, p.81) during phase one of the project

Yi Fu Tuan (1977) reflects upon the commonplace method used by architects for centuries to conceptualize architectural space in a formal plan or diagram. By "making sketches, the architect clarifies *his own ideas*" (p. 104, emphasis added) and eventually arrives at a plan that can help "others to understand what is to be done" (ibid.). By adopting Fällman's framework, I adapted this commonplace method so that the architect used sketches and drawing to clarify *my ideas* about the most important qualities of the artefact, generated by the design studies element of the framework. This shift in method was essential since it was imperative that the artefact design should represent the ideas that had emerged from the design studies element of the research. It also enabled the architect to continue to work within a visual, spatial language by communicating my ideas back to me in conversation until I was certain that they were adequately reflected in the proposed design.

3.5.1.3 Model-making and plans

Once a series of drawings and sketches had been discussed, dismissed, redrawn and agreed, the design team was briefed directly by the architect about the nook design. He did this by

communicating ideas in the form of sketches and drawings which the design team then transposed into more formal two-dimensional plans using CAD, see Figure 3.6 below, and into models made from cardboard and balsa wood. This process invited serendipitous outcomes in the design team's own interpretation of the architect's communications, with the possibility of improvements to the design, as well as the opportunity for me to discover whether my original intentions had been communicated clearly enough to be realized in a final plan or model.
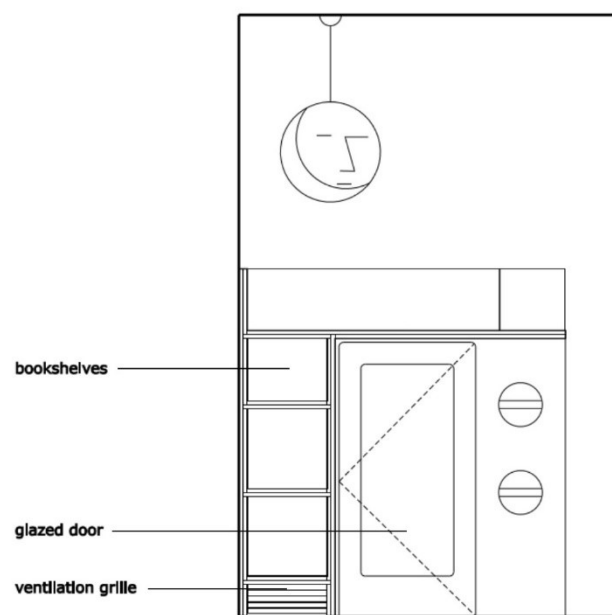
Figure 3.6: A section from the plan of the nook
drawn by SCABAL Architects

During this first phase, the design team were engaged in designing the interior of a new restaurant and so to enhance the plan with a three-dimensional visualisation of the nook, I also requested the assistance of a former colleague with expertise in CAD to use it to present more easily readable 3-d models in presentations to academic colleagues who, like me, were not necessarily visually literate in the reading of architects' plans. This visualization, which can be manipulated to show the nook from different angles, is used to illustrate findings in Chapter Four, section 4.1.

Images of precedents for the nook and drawings of the design were stored digitally on the SCABAL internal computer network and on my own desktop computer with the additional backup of a hard drive. Sketches made by Cullinan were photocopied from his notebooks with his permission. These copies were then numbered and dated to aid cross referencing (Pedgley, 1997).

3.5.1.4 Methodological challenges associated with phase one.

Tensions arose from the outset of the doctoral collaboration between the imperative by the architectural practice to make a financial profit from the work produced during the collaboration and my own endeavour to identify gaps in knowledge and promote change for the benefit of pupils in schools. The discovery and application of Fällman's framework was extremely helpful in this respect because it allowed the element of design practice, with its emphasis on the material and commercial aspects of the project, to be set aside during the first research phase. This gave me the opportunity to begin the project by pursuing an approach to design that was thoroughly grounded in academic research and exploratory but not enmeshed in concerns about materials or financial gain.

My research drew upon a substantial body of research about reading, readers and the teaching of reading. A challenge of this phase of the study was to translate this complex research into design specifications that could be effectively communicated to and understood by the architect. The architect's solution to this was to commission the design brief from me as discussed in detail above. Point two of the brief requests the identification of "the problem" to be solved through the design. Without Fällman's triangular model in place, underpinned by a phenomenological perspective, this understanding by the architect of design research into reading spaces as a problem-solving exercise might have clashed with the goals of the research. However, I approached this challenge by regarding the creation of new knowledge as a primary goal rather than placing "the problem" at the centre of this study and responded to his request by expanding the discussion to address the challenges faced by pupils and teachers by current pedagogies in Year One of the English

primary school and the wider issues of supporting beginner readers. This response to "the problem" facilitated the development of the brief as a document through which communication channels could be forged rather than as a blueprint for a problem-solving artefact.

A third methodological challenge arose from the gap between my experience as a teaching professional and Cullinan's professional experience of school buildings as a client design advisor, for which he was engaged to present a single, strong vision for a new design. He explained that when operating as a client design advisor on behalf of a school or local authority, "If you're not clear about your vision at the start, contractors and others will seek to change it for their own reasons. So you need to articulate things very strongly through the briefing process." This was at odds with my own lived, day-to-day experience of working in primary schools because the work of teaching is necessarily more pragmatic and adaptive to the needs of learners. I addressed this gap in our approach by involving myself, as far as possible, in every aspect of SCABAL's commercial work to try understand how this 'single, strong vision' might manifest itself in relation to my own research goals.

3.5.2 Phase two: design exploration and design practice

The second, empirical phase of the research centred upon fieldwork in seven primary schools. Underpinned by a phenomenological perspective, this phase provided insights into the human experience of the school building and the opportunity to observe the spatial arrangements and habitual routines of the school day.

During this second phase of the study, when visiting schools, I positioned myself as a teacher-researcher so that I could engage teachers in the research without suggesting that my observations of their lessons, routines and spatial designs were in any way a judgement upon their abilities as teachers or that such judgements would be reported to other members of staff in their schools. By clarifying my position as a teacher who had taught reading in Year One, I also made it apparent to teaching staff that I understood the professional vocabulary that they used to describe their work, as well as the demands of the

current curriculum and the national assessment regime in place for pupils, teachers and schools.

Fällman asserts that phenomenology is "a highly empirical activity in that it attempts to build models of the world from what it finds in the world, rather than from some previously existing metaphysical system" (Fällman, 2003, p. 358). The school visits detailed in this chapter offered the opportunity to experience and evaluate existing designs for beginner readers that had been improvised by teaching staff in their schools. These designs were "of the world" (ibid.) in contrast with the conceptual nook designs that were drawn during phase one as a response to academic research. Fällman suggests that "a potential stumbling block to empirical investigations" (p. 359) when "trying to get at other people's experiences" is that "results are rarely, if ever, consistent with one's presumptions about the world and about what other people will experience" (ibid.). Moreover, he asserts that when one conducts empirical investigations to assess one's own designs, most of the time "people seem to think of and experience artifacts in a different way than one as a designer has come to see them" (ibid.). This phase of research in schools attempts to avoid these pitfalls by investigating how existing, lived designs for reading in schools are perceived and experienced by staff and pupils rather than simple bringing a prototype nook into schools to evaluate their responses to it.

While phases one and three are concerned with where beginner readers *could*, i.e. ideally read in the school building, Phase two aims to ascertain where they *do* read. Beyond a simple but valuable taxonomy of the types of spaces where beginner readers read, three further subsidiary questions emerged to promote more knowledge about design for reading and the routines and practices that are supported by this design. The scope of these questions is briefly outlined below.

A. In which types of space do beginner readers read?

This question was designed to elicit a simple list of the types of spaces where beginner readers read in their schools, such as the classroom book corner or the corridor. In Findings

(4.2.1), these spaces were referred to either as 'teaching spaces', i.e. spaces that reach the minimum standards for teaching and learning in terms of acoustics, lighting, temperature control and ventilation or as 'non-teaching spaces', where these standards are lower because teaching and learning (aside from physical education) is not normally expected to take place there.

The question addressed an absence of research into where beginner readers read in primary schools and provided a basis for further research in questions B and C (below).

B. What are the qualities and attributes of the designed spaces and areas where beginner readers read?

Question B elicited information about the suitability of sites and spaces for reading in schools by assessing their qualities, such as whether they are noisy or quiet, large or small, in a secluded area in the school or one that is exposed to interruption and distraction.

C. How do members of the teaching staff design for reading for Year One pupils?

In response to Question C, specific designs for readers made by teaching staff in each of the seven schools were compiled and analysed. These designs were recorded in photographs, in transcribed conversations with teaching staff and in my own journal notes. This also enabled me to assess the viability of the first nook design in each of the schools that I visited, which resulted in substantial alterations to the second design of the nook in phase three.

D. Do all beginner readers in Year One read in the same spaces in their school?

This question was designed to examine the concept of the beginner reader in Year One at a more granular level by prompting an investigation of whether all of the children in the Year One class, whether fluent or emergent readers, read in the same locations or whether some children were being withdrawn to alternative locations in the school for reading tuition. When this was the case, the type of reading space that children were withdrawn to was

assessed as a 'teaching' or 'non-teaching' space and the suitability of each space was appraised.

3.5.2.1 Selection of Schools

Seven schools were visited over a one or two-day period, depending upon the timetable of the school: six primary schools (for children between the ages of 3 and 11) and one infant school (ages 3-7). Six of the schools were in Greater London and the seventh in a large town in Hampshire, fifty miles from the centre of London (population 87,000). Each school had at least two classes in the Year One cohort. The visits took place during the summer term of 2015. The summer term was chosen to ensure that child participants in the study would have already spent at least two full terms of reading tuition in Year One and would also be familiar with the daily routines associated with reading in the school. Each child had just taken or was about to take the statutory phonics screening test that is required of pupils in Year One. None of the children taking part in the study were new to the school at the beginning of Year One.

Rather than attempting to find a representative sample, and I would argue that no such thing exists, schools were selected through an opportunistic, emergent method. This method of selection allowed me to adjust the research parameters when faced with an aspect of the research that I had not originally understood to be of significance. At the outset, I wanted to ensure that the schools selected were in areas of varied socio-economic advantage, which at the time of the study may have had implications for the level of funding that each school could draw upon to support reading activities. However, after the first three visits, which were all made to schools that were at least one hundred years old, I recognized that the age of the school building was also an important factor in terms of the spaces where readers read and began to approach schools built after 1945. The number of schools visited was increased from six to seven to ensure that at least one school built in the 21st century could be researched.

I did not select schools where I had worked as a qualified teacher or was known to the pupils but did approach schools with which I had a connection, either through a known member of staff or, in one instance, the school that I had attended between the ages of 7 and 11 but which I had not visited since I left in the 1970s. This approach allowed me to reach the relevant person in school without delay and, once an agreement to research had been made, to obtain permissions effectively from staff, parents and children. At the time of the visits, none of the schools were operating as special, faith, independent, free or academy schools. I made a choice to work within the mainstream, community primary network of schools in England to ensure that each school would follow the same statutory programmes of study set out in the national curriculum and would be funded by the same means.

A table summarizing details of the schools researched and the types of data generated can be found in Appendix B.

3.5.2.2 Preparation for visits

I used the Edubase public portal, the Department for Education's register of educational establishments in England and Wales, to gather information about each school. Edubase provided initial data about the number of pupils, the capacity of the school and the percentage of free school meals allocated to pupils as an indication of socio-economic status. Details of the school's location within the borough, its history and the particulars of rebuilding or refurbishments were researched from the school's website and other relevant sites prior to the commencement of field work. Since the research took place, the Edubase portal has been archived and replaced by a new 'find and compare' service on the gov.uk website (DfE, n.d).

Each school was approached in writing with an email that explained the research proposal. This was followed by a phone call to the school office to speak to the relevant gatekeeper. Each of the schools that took part in the study quickly confirmed positive responses,

allowing me to schedule visits and begin the process of arranging consent from parents and carers. The letter of consent is reproduced as Appendix C. Dates for each visit were then agreed with the school. The appropriate level of documentation and clearance from the Disclosure and Barring service (DBS) was requested and obtained.

To ensure a consistent level of anonymity and respect for the participants, four points were agreed with each school in advance:

1. The school would not be identified by name in any reporting of the research.
2. No child or teacher would be identified by name or image.
3. Photographs taken by me of locations in the school and used in the thesis would be shared on request with staff and pupils.
4. No photographic images of children would be taken. Any photographic images taken by children of other children would be deleted.

Having received consent from teachers, parents and guardians in advance of the visit, the process of obtaining assent from children in each school was deliberately left until the days of the visits. I wanted each child to be able to make an immediate decision about assent or dissent, based on how they felt about participating on that day at that time. Children are not generally given the opportunity to plan their own timetable in primary education and I wanted to make sure that each child was certain that they were not missing out on another, preferred activity when the research was taking place and that they felt well, confident and happy to be engaged in the project once it had been explained to them and they had met me. Assent from the child-participants was on-going: body language as well as the verbal signalling of assent was considered to ensure a child could leave the project whenever they chose and that no child would be disadvantaged by deciding not to take part in the research or by withdrawing from the research once it was underway. In each school, I worked with one of the two or three Year One classes in the cohort.

3.5.2.3 Schedule for the first morning of each school visit

It was arranged that I would be taken on a full tour of the school at the beginning of the school day prior to the research commencing. This tour was organized and provided by a member of senior staff or, in one instance, by the chair of governors. This gave me an opportunity to familiarise myself with the design and layout of each school building; to locate stairs, toilets, staff rooms and libraries. It also furnished the opportunity to meet other key members of staff: school premises managers; head teachers; SENCos and Reading Managers. The person leading the tour described their own perception of reading practices and spaces in the school, prompted by my questions. I also met teachers in parallel classes and teaching and special needs assistants in each school. I recorded observations about the tour and comments made by the staff in my research journal once the tour had finished.

Having provided clear information about my research and introduced myself to the class teacher by email or phone in advance of my visit, I met each class teacher in their classroom before the children arrived to start the day. I discussed with them how I would be introduced to the children and talked through the timetable for the day with the teacher and teaching assistants to arrange suitable times with the teacher for the child-led tours of the school to take place. Once the children arrived in the classroom, I was introduced to them as someone who would be spending the day in their class without the specifics of the research being discussed. Children, as well as teachers, are used to having visitors to their classroom and appeared to accept this as a normal part of their routine. In the first session of the day, before the morning break, I made initial sketches of the classroom, noting fixtures and furniture. I recorded details of the timetable and where children were directed to sit and to work. I also recorded comments by teaching staff and pupils relating to reading activities, practices and spaces. Child-led tours of the school did not commence until the second session, giving me the opportunity to observe established spatial arrangements and groupings in the classroom.

3.5.2.4 Selection of child participants

To answer the primary research question of where beginner readers read in the school, six children from each school were selected from all those who volunteered (with a show of hands) by their teacher to guide me on a tour of the locations and spaces where they had read at least once and to collect photographic images of the spaces.

Question D addresses the question of whether all beginner readers in Year One read in the same spaces in their school and the six child-participants were selected by reading ability, as assessed by their class teacher, to ascertain whether this was the case. When children were being withdrawn from the classroom for extra reading tuition, the spaces to which they were taken were assessed to ascertain whether they were suitable, comfortable for them and appropriate for their needs. The emergence of this question was prompted by the research literature, see section 2.4, suggesting that beginner readers are more liable to be disturbed by interruptions and noise; that a high proportion of young children in school may have undetected intermittent or permanent hearing loss; and that specific cohorts of children, such as those with autism or for whom English is not a first language, may be additionally disadvantaged by learning to read in noisy or acoustically poor conditions.

It is important to emphasize that the children were selected by their teacher within the paradigm of ability-grouping for reading set up by that teacher. In each of the seven classrooms visited, children were grouped at tables for reading lessons as "top, middle or bottom" readers or as "high, middle and lower" ability. Teachers generally used acronyms when talking about the reading groups, e.g. HA or LA or would refer to the names given to designate individual reading tables such as Robins or Tractors. In each classroom, teaching staff were comfortable with the selection procedure and selected two readers from each of the three categories described above. The "higher ability" readers in each school could read a simple chapter book, i.e. one with few or no illustrations, relatively fluently, with less than one error for every twenty words. The "lower ability" readers in each school could recognize some words in a simple text, while "middle ability readers" were generally able to read a very short, illustrated book with less than one error in every ten words. When sorting data, I

used my own tags to identify readers as fluent, proficient and emergent readers. I acknowledge that ability grouping and the language used to describe this process can be extremely problematic and restate that my intention was to work within the (cognitive-psychological) paradigm adopted by teaching staff to ascertain how it translated into the spaces where readers read, even though I do not a support of this paradigm for reading.

As a specialist reading teacher who was accustomed to withdrawing children from the classroom, I was not surprised by the enthusiastic nature of the response that the teacher received from the children when asking for volunteers to take me on a tour of the school. Volunteers were chosen consecutively and one-by-one. The tours continued throughout the school day but avoided any event that the teacher judged it important that all children should attend.

It was not my intention to select only neurotypical participants for this study and, indeed, volunteers with autism and Down syndrome were chosen by their class teachers to participate in the study. As Manning explains:

> The idea of the neurotypical as building block of human existence is so pervasive that not only is it rarely recognized as such, but most of us have overlooked the ways neurotypicality structures our original myths, starting from the idea that humans are distinctly above all other forms of life and extending all the way to the idea that certain forms of human life are more worthwhile than others (2016, pp. 135-6)

None of the children in any of the participating classes in the study had a physical impairment that compromised their ability to walk or to take a tour of the school.

3.5.2.5 Child-led photographic tours of the school

Children were involved in the collection of this data so that an understanding of where children read in school could be ascertained, rather than where adults might like to think

that children read. It was also considered important to record these spaces with images from the child's point of view.

These tours formed the basis for my research about the types and qualities of spaces in which beginner readers read (questions A and B), to find examples of reading spaces beyond the classroom (question C) and to ascertain which readers read in which spaces (question D).

Once a volunteer had been selected by the teacher, an unoccupied area of the classroom was chosen prior to the tour as a location where each child could familiarize themselves with the digital tablet on which the images were to be taken. Every child in the study could operate the tablet's camera immediately and effectively. I made sure that each volunteer understood their role and what they were being invited to do (Dicks, 2013) and explained that we would not be able to use or keep any photographs featuring other children and if that happened, then that those images would be deleted at the end of the tour. I also made it clear to each participant that I was a researcher rather than a friend or a teacher (Corsaro, 2005) who was visiting their school to do a job and that I needed their expertise and knowledge to help me do that job.

Each tour began in the child's own classroom, prompted by the questions, "Can you show me where you read in here?" and "Can you take a photograph of where you read?" The purpose of the tour was to elicit data about where each child read and so further responses by the child to the qualities of the spaces were gently prompted but with no insistence upon an answer. I jotted down any verbal responses in my notebook rather than recording them digitally since, in my experience, using a recording device can inhibit those responses.

Once the images had been generated by the child of reading spaces in their classroom, I asked them to confirm their assent to continue the tour. As I was guided around the school by individual children, they were encouraged to lead me to each location where they read. I did not use a camera on these child-led tours, preferring not to interrupt their collection of images, but returned to photograph the same locations at the end of the school day. Before

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the tour concluded, a final prompt was given: "Can you show me any other places where you used to read but don't read any more?", checking with the child that these were locations of reading activities during Year One.

During fieldwork in the third school visited in my study, School O, it became apparent that the child-participants did not understand phonics to be related to reading and had therefore not been photographing spaces in the school where they were taken for phonics lessons. In subsequent visits, I referred to both reading and phonics when asking children about the spaces where they read as I was also curious about the locations of their phonics tuition, however I did not return to the first two schools to correct this possible misapprehension on my part as I was more interested in the spaces where children were withdrawn from the classroom to read individually with an adult or in a small group.

The images taken by each child were reviewed in a process of photo-elicitation (Harper, 2002) once we returned to their classroom. This review process was designed to consolidate the child's sense of themselves as a researcher as well as to elicit any further comments about reading spaces. Clark notes that "[p]hotographs taken by young children can provide a platform of communication between adults and young children" (2005, p. 494). These photographs also provided a further opportunity to listen carefully to each child as they reviewed their images. Clark also suggests that when children are interviewed, "there must be appropriate debriefing with praise and thanks" at the end of the interview (p. 493). Although this was a short conversation rather than an interview, the praise and thanks was given to each child, all of whom were knowledgeable guides who took their role as documentary photographer of reading spaces extremely seriously.

Following each tour, before another participant was chosen, I consolidated the jottings I had made about each tour and the reading spaces, referring to the images on the digital tablet. I made further notes about the child's comments and descriptive notes about the locations visited. I also recorded the qualities of the spaces that I had noticed, such as noise levels and strong smells (cooking, toilets) that could not be captured in an image.

At the end of the school day, once the children had left the classroom, I photographed each reading space indicated by a child on the tour and any specially designed furniture relating to reading. I noted the qualities of each space, such as the storage, display and arrangement of books; the ambient temperature; levels of artificial and natural light; the sightlines from each reading space to the area beyond, including the teacher's desk and chair and the textures of soft furnishings, such as cushions and rugs. The dimensions of book corners and reading spaces were also measured and their area was calculated as a proportion of the classroom as a whole. This was done as a prompt for further design discussions with SCABAL about the second iteration of the nook. For any future project that involved the measurement of classrooms, I would use a digital tape measure, however, as measuring classrooms in which there were many fixed obstacles presented a challenge.

It is not easy to create a research situation with children in schools where the adult researcher can genuinely claim that the research experience has been of benefit to the child. I hope that the participants enjoyed the experience of communicating their personal knowledge of their own school to an adult visitor who was unfamiliar with the school environment and routines.

3.5.2.6 Research with teaching staff through conversations and interviews

In this thesis, designed spaces created for readers by teaching staff are viewed as genuine attempts to provide alternatives to the affordances of the built fabric of the school building. Such interventions may be "idealistic" or "subversive" Fällman (2008) and include the provision of bespoke reading pods; shelving and bookcases for the storage and display of books; the requisition of a room as a reading room; or simply the addition of a cushion or soft toy to a plastic box of books beside which children can choose, sit and read. Teachers may create spatial arrangements of furniture and position children in their classrooms without necessarily recognizing themselves as 'designers' of these spaces. Nevertheless, In addressing question C, "How do members of teaching staff design for reading for Year One pupils?", I recognize teachers' agency as designers of their classroom and the constraints

that limit their ability to design for reading, for example, a lack of training or financial constraints.

Teachers invariably give instructions to and have conversations with support staff in the classroom throughout the school day. During this study, each of the participating teachers and several members of the support staff made informal comments to me about reading practices and spaces in their schools during lessons as these thoughts occurred to them and I noted down their remarks whenever the opportunity arose. These informal conversations were particularly useful because they were prompted by 'live' situations that occurred and developed during the visit and enabled me to build a picture of their perceptions of reading in their schools.

I took the opportunity to have conversations with support staff, who are not generally paid to stay beyond the end of the school day and who invariably are on playground duty during break and lunchtime, on an ad-hoc basis whenever possible, since they often have additional knowledge of the arrangements for reading beyond the classroom.

Bevan (2014) contends that although the interview is the most common method for data collection in phenomenological research, there is little instruction about how it should be undertaken or how the data are obtained in a phenomenological manner (p. 137). However, Kvale and Brinkmann (2009), who perceive interviewing as a craft, offer an outline of twelve aspects of a qualitative interview from a phenomenological perspective (p. 29), including the general topic of such an interview: the everyday lived world of the interviewee and their relation to it; the qualitative nature of the interview; and the way in which an interview should be focused on particular themes without being strictly structured or entirely non-directive (p. 28). These guidelines are as specific as a template for a phenomenological interview are likely to be, since phenomenology has no universal method (Bevan, 2014, p. 138).

With respect to my own phenomenological method for interviewing, I began each interview with a member of teaching staff by asking them to describe the spaces where they read in

their own childhood schools and how they felt about them. This initial question prompted the participants to remember the qualities of the spaces where they learned to read in school and to bring them to life. This introductory question was then followed by questions about their ideal reading space and how they would design for reading in their schools if resources were unlimited. Other topics included their responsibilities for reading beyond the classroom, as some of the teachers interviewed had an additional responsibility for Literacy within the school, and the training they had received in designing their classrooms before they qualified. Additional responses emerged from the specificities of each teacher's school. In line with the guidelines suggested by Kvale and Brinkman, descriptions of specific sites and situations were elicited rather than general opinions.

Interviews took place in each teacher's own classroom to give them a sense that they were on *home ground*, in which they were unlikely to be interrupted or overheard by other members of staff and to prompt insights about the space around them. The duration of the interviews was between twenty and forty-five minutes and they were recorded digitally and transcribed by me within a week of the interview. The transcripts were then sent to the teachers so that they could correct any errors or delete any part of the interview that they were no longer happy to be recorded. None of the teachers requested any changes to the transcripts.

Other interviewees were sought out for their involvement in the architectural design of schools at a national level. Reading recovery teachers were also interviewed informally at their annual national conference in 2014 at the Institute of Education in London about their experiences of teaching reading in liminal, secluded or open spaces in primary schools and these accounts also informed my understanding of design for primary education relating to reading.

3.5.2.7 Data management

Participating pupils in schools were given a digital tablet with which to record images and a back-up tablet was provided in the event of any malfunction. The children in every school handled the tablet respectfully and no problems occurred. I used a digital camera for my own photography of the spaces where children read. Field notes, details of conversations in the classroom and sketches were recorded in a single, A3-sized field journal. A small notebook was used to write down comments made by children on the tour. Semi-structured interviews with teachers were recorded using a voice-recording application on my mobile phone.

Images were downloaded at the end of each day's research onto a desk-top computer and immediately saved onto a hard-drive as back-up. Having investigated qualitative data analysis software, designed to facilitate the organisation of qualitative data, such as NVivo, I decided instead to create a simple, coding system for each image using a basic file-management programme. Each image was given an identifying tag relating to the designated letter name for each school, the location of the reading area in the school and the identifying tag and gender of the child taking the photograph. The digital images were then indexed by file name in a password protected spreadsheet. Additional notes about the images were recorded on the spreadsheet, referencing each image and allowing them to be re-sorted and categorized as required. In this way, I could preserve the integrity of the original photographic data while segmenting subsets of the data.

Putting together a thesis is a lengthy procedure and to ensure that I could remember each school and each designed space in that school when 'writing up', I also compiled a profile of each of the seven schools. These profiles comprised a written vignette of each school; a compilation of all pertinent comments and interviews; and annotated images of each reading location. Extracts from these case studies appear in the findings in 4.2.

3.5.2.8 Data analysis

According to Starks and Brown Trinidad, qualitative analysis is inherently subjective because "the researcher is the instrument for analysis" and "makes all the judgments about coding, categorizing, decontextualizing, and recontextualizing the data" (2007, p. 1376). In this section, I describe the methods I used to analyse the data generated by school visits, fully acknowledging that my engagement with this process of analysis was, as Starks and Brown Trinidad assert, fundamentally subjective.

I begin by describing methods of data analysis relevant to Research question 2: "Where do beginner readers read in schools?" These data, generated through empirical research with seven classes in seven schools, contribute knowledge to the field of reading and literacies about the types of reading spaces used in schools by individual beginner readers. This knowledge is new because no other published study has comprehensively assessed and categorized spaces where beginner readers learn to read in English schools.

This is followed by a description of the methods of analysis for data generated in response to Research question one, "Where could beginner readers read in schools?" A wide range of contextual data, including the age and layout of each school building and the teaching and assessment practices and routines encountered in each classroom, were also generated during phase two. These data were sorted by their relevance to the suitability and the viability of the initial nook model in each of the classrooms researched so that an improved nook design could be realized by the end of phase three. Analysis of the data generated as the school visits progressed was continuous and was made in conjunction with the architect and the design team.

Data analysis relevant to Research question 2

As a precursor to the analysis of data about the types of spaces where children read in all seven schools, data generated by the child-led tours and interviews with staff were categorized into two broad themes: 'In the classroom' (4.2.2.1) and 'Beyond the classroom' (4.2.2.2). Data from the latter group were then separated into two further categories:

'teaching' and 'non-teaching spaces'. These data were visual (digital images) and written, i.e. transcribed audio recordings and notes of ad hoc comments from teaching staff and children. These initial themes were then unpacked through further analysis to create a non-hierarchical taxonomy of the types of spaces where beginner readers read in schools, see Figure 4.6. These data represent original research that could be re-interrogated as the starting point for further research in the field of reading and literacies.

Empirical research in phase two also tested the hypothesis that some children in the majority of Year One classes in primary schools in England are withdrawn from the classroom by an adult for supplementary reading instruction. This hypothesis was tested using the method of child-led tours to ascertain whether children read in spaces beyond the classroom. During these tours, children indicated to the researcher and generated images of the reading spaces where they read. Deductive reasoning was applied to this simple data set, based on six children in each of the seven schools researched, to determine whether any children from each of the schools were or had been withdrawn from the classroom to read with an adult. The same method was used to test the hypothesis that children who are perceived as 'lower ability' readers by their teachers are more likely to be withdrawn from the classroom to read than those who are perceived to be of 'higher ability' as readers. The findings from this analysis contribute evidence to the field of school design in three key areas:

i. whether there is a need for well-designed reading spaces beyond the classroom

ii. whether such spaces would be likely to be frequently used by emergent readers

iii. whether these spaces should be designed to support the specific needs of emergent, non-fluent readers, as identified in Chapter Two.

Data analysis relevant to Research question 1

The viability of the original nook in schools was one of the foci of data generation and analysis in phase two of this study. It was ascertained, through my ongoing observations in schools, that guided reading sessions were planned to take place daily in each of the classes researched and that during these guided reading sessions, children were routinely divided

into groups of six. The concept of the nook was reappraised as a potential location for one group of six children during this activity as a consequence of this new knowledge about how the reading curriculum was organized in all seven schools. Once this new feature of the nook, i.e. the ability to comfortably seat six children at once, was established, the numerical data that was generated about the dimensions of the seven researched classrooms became more significant in determining whether there would be a large enough space in each classroom to accommodate this new design. Data about the fixed features of each classroom such as doors, windows, radiators and sinks were then analysed by matching measurements to the plans and sketches that I had made during my visit to each classroom to establish instances where these fixed features might impede the installation of a nook.

A second stage of analysis concerned the suitability of specific features of the original nook design in each of the classrooms researched. Having sorted data in the form of images, measurements and written notes of my own comments and those of participants relating to each classroom, I then assessed the suitability of the original nook against those images and measurements. I assessed potential problems with the location or design of the nook in the context of each of the classrooms researched, annotating the images and the transcribed audio recordings of interviews and establishing broad themes relating to features of the nook that might need to be modified. These themes included visibility, supervision and ventilation. As the study progressed, I used thematic analysis to narrow down and identify each potentially problematic feature of the original nook design and I used these themes to structure critical discussions with the architect and the SCABAL design team. One such discussion, for example, concerned the difficulty of locating the reading nook next to an outside wall to allow a ventilation pipe to filter clean air inside the nook, which had been designed to be sealed to promote excellent soundproofing. Analysis of this data was straightforward since the features of the nook that would preclude its installation in some of the classrooms visited, as in the example above, were immediately apparent to the researcher during the visits. However, the annotated images were also used as evidence to support my suggestions in discussion with the architect and design team.

3.5.3 Phase three: design practice and design exploration

In phase three of the study, features of the original nook design that had been revealed as unsuitable in one or more of the classrooms researched in phase two were reanalysed and modified. New knowledge about the routines, practices and needs of teachers and beginner readers in schools, also generated through the empirical research undertaken in phase two, was synthesized to create a final prototype. This phase of the design process was again supported by iterative analysis and synthesis through critical conversations with SCABAL and the collaboration with a new partner, Jenx, who introduced further modifications to the design based on their long-standing industrial experience to comply with relevant safety standards.

3.5.3.1 Data synthesis

Although data analysis is primarily used in educational research to describe the critical insights arising from data, the research methods used in the third phase of this design-oriented research study, modelled upon Fällman's framework, should more accurately be described as synthetic rather than analytic in nature. Fällman regards design practice primarily as a "synthetic" element of his model (2008, p. 6). In Design Dictionary: perspectives on design terminology (Erlhoff & Marshall, 2007), the (unnamed) contributor(s) to a definition of synthesis reference a Hegelian process of design, noting that Hegel used the term synthesis "to indicate a process of ideation whereby one idea (thesis) is proposed, then another idea (antithesis) negates the first idea, and then a third resolves the conflict between the first two and transcends them (synthesis)" (ibid., p. 389). This Hegelian understanding could be applied to the three phases of this doctoral study: the first proposing the idea of a reading nook; the second (empirical phase) generating data that negate some aspects of the initial concept; and the third, synthetic phase creating a design that resolves problematic aspects of the first design and improves upon it.

One complication arose when using Fällman's framework that is not explored in his 2008 paper. As a teaching professional rather than a designer by background, I was unable to synthesize the data generated in phase two into a design of my own independently and had to depend upon communicating my ideas about how to improve the nook to the architect through descriptions and images, a method also used in phase one. Only then could he and the design team create the final drawings and models for me to critique and suggest refinements to. In Design Dictionary, it is suggested that design possesses "a unique ability to operate across disciplines and access the knowledge and methods particular to each and harness them for the task at hand" (Erlhoff & Marshall, 2007, p. 133) and that "the designers' expertise" is "better understood as locating, organizing, and integrating the knowledge or information that is required to make a particular intervention effective" (ibid. p. 144). In this study, I drew upon this unique ability of design to operate across disciplines and to harness those disciplines to influence the design of the nook. I generated and organized data to ensure that the design was relevant to contemporary school buildings, routines and practices. I also contextualized the original nook within each classroom to assess its viability and shared my summative analysis of the nook's strengths and failings with the architect rather than expecting him and the design team to examine the visual and numerical data from each of the schools I visited. However, it was only in collaboration with the architect (and his particular expertise in design) and the design team at SCABAL that this new knowledge could then be synthesized to develop a prototype nook.

In phase three, the dimensions and features of this new nook were recontextualized using data from the seven classes I had already researched to assess its suitability and viability before a final prototype was manufactured and assembled.

3.5.3.2 Materials analysis

Karana, Pedgley and Rognoli suggest that materials, or "the matter or substance of things" can be a starting point for design not only by considering how people experience materials but also how designers may approach *design for experience* from a materials perspective (2015, p.17 original emphasis). Between phases one and three, the architect had become

attracted by the idea of creating a plywood model of the nook, which could then be curved to make an aesthetically-pleasing design. In this case, the materials themselves were starting to shape of the design. The architect and I arranged a meeting with the ply-forming company Becker but the prohibitive cost of a plywood prototype meant that alternative options needed to be investigated. Becker also offer *Starke roh/Starke gepresst*, a material that can be pressed into any shape, putting local fold patterns into the surface to give it sheet-strength. This material is similar to the material that forms the shelf at the back of a car, although *Becker* market it as an acoustic product for furniture. Again, the cost was prohibitive without sponsorship. One member of the design team created a model that was intended to be scaled up in plywood if a sponsor could be found.

Figure 3.7: Model nook by Rebecca Turner

3.5.3.3 Working in partnership with Jenx

In phase three, a shift in emphasis occurred towards a realization of the nook as a small-scale project. Singer and Woolner advocate a small-scale approach to school design, making a case for projects that are modest in scope. They contend that such projects are "more

tangible because they are outside of the complicated and perhaps not easily understood machine of school building procurement" and thus have the potential to change "the every-day, long-term experience of educational space" (2014, p. 189). A small-scale approach also enabled the project to continue beyond the timescale allowed by the PhD so that further research with a prototype nook could take place in schools. Additionally, the realization of the nook as an artefact allowed "the materiality of the details" to become evident, intensifying sensory experiences and engaging psychological dimensions (Holl, 2013, p. 24). Small-scale models cannot convey what it feels like to be in a space or to touch and engage with the scale and tactile qualities of an artefact or piece of furniture or to be inside a space within a particular building. By constructing the nook to a scale that could accommodate beginner readers aged five and six, decisions about materials, light, sound, aesthetics and scale became real and tangible rather than imagined.

My role in this third phase of the study developed from 'researcher' or 'client' to become more fully collaborative, not only with SCABAL but also with the furniture designer Jenx, who generously offered access to their design expertise and materials. Erlhoff and Marshall describe this collaborative process as "synergistic" (2007, p. 388), synergy being "the process whereby two or more people or organizations with complementary skills, resources, and knowledge are able to achieve more through collaboration than the simple addition of their efforts working individually would have suggested" (ibid.) and certainly the prototype would not have been realized within the lifetime of this doctoral study without the timely intervention of Jenx.

The cost of building a prototype plywood nook, estimated at over £6,000, was well beyond my means as a graduate student. However, following a lengthy correspondence with the Director and the Divisional Director of Jenx in which I explained my aims and objectives for the project, they offered to manufacture a full-sized cardboard nook in their factory at no cost to myself. SCABAL supported this new collaboration by sending the CAD models of the nook to Jenx so that they could develop the model to comply with the strict safety standards demanded by their industry.
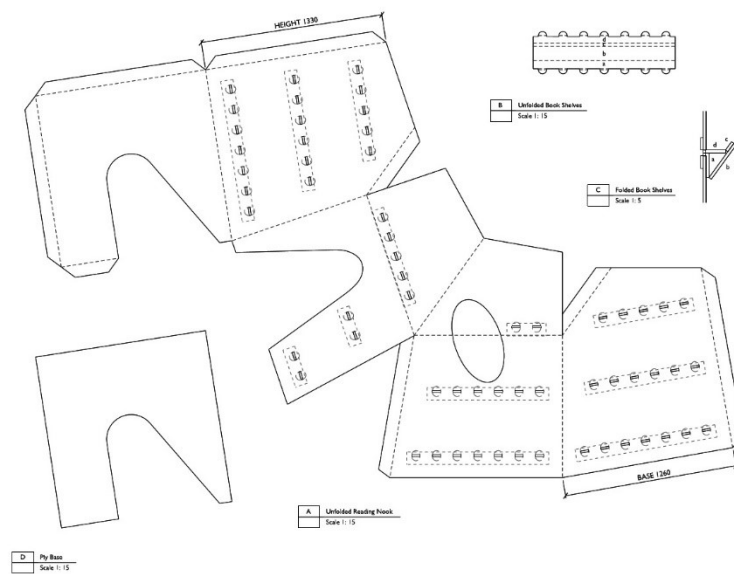
Figure 3.8 Net of model nook by the design team

Due to their own scrupulous safety specifications, the design team at Jenx had not been convinced by the value of plywood as a material or by the tepee shape that had emerged as a result of the architect's interest in making a curved design. This led to a final drawing of the nook by the architect. In a personal email to Jenx, he described the final design as "a non-figurative compartment that can stand alone or in a corner" with two vertical walls and "two walls and the roof angled to the vertical to allow books to be presented face-on, supported by a simple peg or wire support through the perforations all over the visible surfaces."

The project manager working on the nook at Jenx was unhappy with the arrangement of shelving resting upon pegs, which he felt might be unsafe for children. However, a doctoral colleague, who was also being hosted by SCABAL, designed new shelves that were strong and safe and could be fitted to all four of the external walls of the nook so that books could be displayed upon them.

Figure 3.9: New nook shelf design for exterior walls by Karolina Szynalska

Several versions of this new design of the nook were tested for safety by Jenx before the final prototype was created.

Pedgley and Wormald, in offering practical advice about how to integrate design projects within a doctoral study, refer to "completeness" and "esteem" as two specific indicators of excellence when judging "Ph.D. candidates" (2007, pp. 80-81). Completeness "refers to the delivery of high-quality design outcomes that lend integrity to the preceding design activity and, thus, to the wider research study" (p. 80) while esteem "refers to the significance of the design outcomes, and their reception outside of the host academic institution" (p. 81). The authors suggest that esteem is directly indicated by one of five criteria:

The granting of patent or registered design rights;
The availability of products for purchase;
Signed agreements with third parties to produce products under license;

Publicity and media attention following exhibitions, competitions, awards, reviews, etc.

The standing and reputation of commissioning, sponsoring, or collaborating organisations (ibid.).

The partnership with Jenx offers "esteem" with respect to the fifth of these criteria since they are a leading, international furniture designer with an international reputation and clientele. Sponsorship from a large building contractor was also subsequently secured to allow research to proceed in schools beyond the remit of this thesis and Jenx supplied and installed two cardboard nooks for this project

3.6 A path not taken: participatory design with children

As a researcher with a child-centred perspective, I would have expected to include participatory design with children as a significant element of this design-oriented research project. Although children participated in the research, providing information, opinions and guiding me around their schools, both the conceptual model and prototype nook were designed by adults and not by children.

The design of the reading nook that emerged at the end of the doctoral study was an innovative space or piece of furniture, intended to be inhabited primarily by children for their benefit. However, to engage children in participatory design, they would need to have been involved with the project from the outset. Initially, my intention was to have a concrete, full-sized prototype built prior to the research phase in schools so that children could explore, criticize and modify this design as a starting point for their own designs for reading. However, it was not possible to find funding quickly enough to have a prototype ready for this purpose. I also felt that it was not appropriate in the context of this study to ask children to invent and to provide for the needs of other children and adult users of the space and that unless children were fully engaged in the research outputs from the beginning of the project, their interventions and designs would be meaningless to them. As

Fällman's triangular model suggests, "real world" elements of design practice, including materials, manufacture and sponsorship, meant that for the purposes of this thesis, the new knowledge produced by the collaborative design of the reading nook was limited to the creation of a prototype rather than a participatory research project with children. However, the knowledge gained by this study about where beginner readers read in school and the suitability of those spaces could provide a basis for a participatory design project in which children are engaged from the outset.

3.7 Research ethics

Within this study, children are regarded as competent social actors who are experts in their own lives (Alderson, 1995; Clark & Moss, 2001; Clark, Kjørholt & Moss, 2005; James, Jenks & Prout, 1998; Rinaldi, 2005) with the right to say what they think about all matters that affect them and to have their views taken seriously. Like adults, children are individuals who are diverse in their competencies (Clark, Flewitt, Hammersley & Robb, 2013, p. 47) and sophisticated thinkers and communicators who are capable of making meaning and reporting on important issues (Conroy & Harcourt, 2009). Clark, Kjørholt and Moss argue that an approach to the relational ethics of listening accommodates greater complexity by understanding children's voices as "multifaceted, changing and contextualized" rather than "authentic", so that competence is viewed as a dynamic and relational concept (2005, p. 178).

This research study was conducted in accordance with the ethical guidelines of the British Educational Research Association (BERA) and ethical approval prior to the commencement of fieldwork was granted by the Faculty of Education, University of Cambridge.

Informed consent (BERA, 2011) regarding access to each of the seven primary schools was sought and given by a gatekeeper on behalf of the school: in each case either a head teacher or a senior member of staff on the Senior Leadership Team. This was given with the understanding that each of the institutions where research took place were to be presented

in ways that guaranteed anonymity. Having a gatekeeper in place also meant that should there be any disclosure of neglect or harm by the child to the researcher that the gatekeeper would be the first point of contact.

Once access to a school was granted and a valid Disclosure and Barring Certificate (DBC) was obtained, consent was sought from parents and guardians for their children to take part in the study. This took the form of a letter explaining the research aims and purpose, asking for consent and describing the potential participation of their child. It was emphasized in this letter that participation was voluntary and could be withdrawn at any stage of the study. This letter was drafted and then discussed with the gatekeeper for their approval before being sent out to parents by the school, see Appendix C. The letter was explained to parents and guardians who were not able to read the letter themselves by teachers and classroom assistants to ensure that they understood the scope of the research and the proposed participation of children.

In addition to parental consent, assent was sought from each child participating on a continuous basis. This allowed the child to withdraw at any stage of the research and was explained firstly by their teacher to the whole class and then by me at the start of and during the tours of the school.

During the first morning of each visit, I was introduced to class by their teacher, with whom I had corresponded or spoken to on the telephone to explain the project in full and ask for their own consent to participate. The selection procedures for children participating in the study is explained in section 3.5.2.4. Although assent from the child was obtained verbally, careful attention was also paid to body language in case that suggested that the child might be reluctant to continue but find it difficult to put this into words.

School design matters to all children in mainstream primary education, including those with special educational needs and attending to their needs is not separate from, but an extension of a process of understanding how to enhance the lives of all pupils who study, rest and play in mainstream schools (Hrekow, Clark & Gathorne-Hardy, 2001, p. 17).

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Enabling these children to be included and to express their perspective about reading was important to this study and consequently I encouraged teachers to select from those who volunteered whether or not they were judged to be neurotypical or able-bodied.

The school, the teachers and children were anonymized throughout the study. When data were generated about locations where participant children read in school, children were allotted a code and their names were not recorded by the researcher. None of the photographs of locations in the school featured any child or adult.

Chapter Four: Findings

This chapter presents findings in three phases. Phases one and two inform the subsequent phase while phase three concludes the findings with the nook prototype.
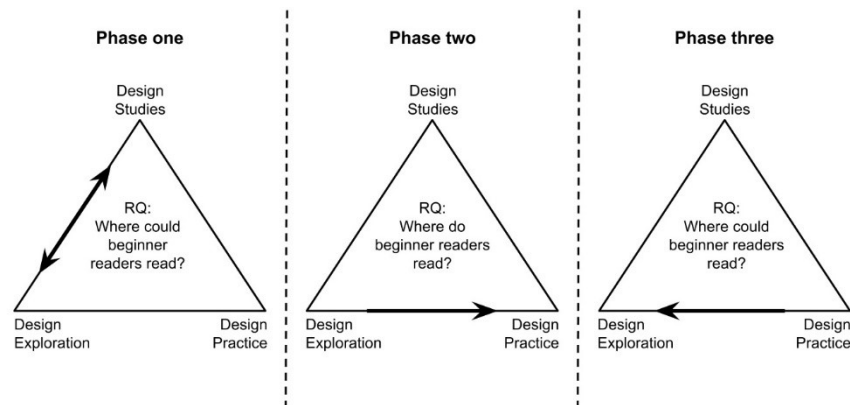
Figure 4.1: Findings presented in three phases

Phase one begins with the question, "Where could beginner readers read in school?" and reports upon the nook artefact as a design outcome, stipulated by Fällman's triangular model. The findings in this phase bring together the salient features of the nook design and the reasons for their selection, in response to the theoretical knowledge gathered about reading, literacy education in primary schools and school design as reported upon in the Literature Review.

Phase two engages with the second research question, "Where do beginner readers read in school?" through empirical research in seven schools. Findings about the types of spaces where beginner readers read are enhanced by insights about the qualities of those spaces, teacher design and who reads in the spaces. Findings in this phase address a notable gap in the literature about where beginner readers read and can be read as a stand-alone piece of research. Thumbnail sketches of each of the seven schools participating in the study contextualize the findings from each school. In addition to this new knowledge, findings from phase two also contribute to the design of the nook prototype.

Phase three returns to the question of where beginner readers could read in school, building on the research from phase two to develop, refine or discard individual features of the nook design that emerged as viable and significant or impractical and unfeasible. As with phase one, findings are organized by designed features of the nook, which are clarified and illustrated with annotated diagrams and images of models.

4.1 Phase One

This phase addressed Research question 1 about where beginner readers could read in schools. It began with drawings and the compilation of a brief, see 3.5.1.1 and Appendix A, and culminated in an extensive review of the literature in Chapter Two and a nook design that took the form of a plan, see Figure 3.6, and of a digitized visualization of the nook. This visualization is presented in the context of a classroom and can be viewed from different perspectives. Screenshots of this visualization have been annotated to highlight key features of the nook and these are presented below as Figures 4.2 - 4.5.

4.1.1 Feature A: physical separation and protection from interruption
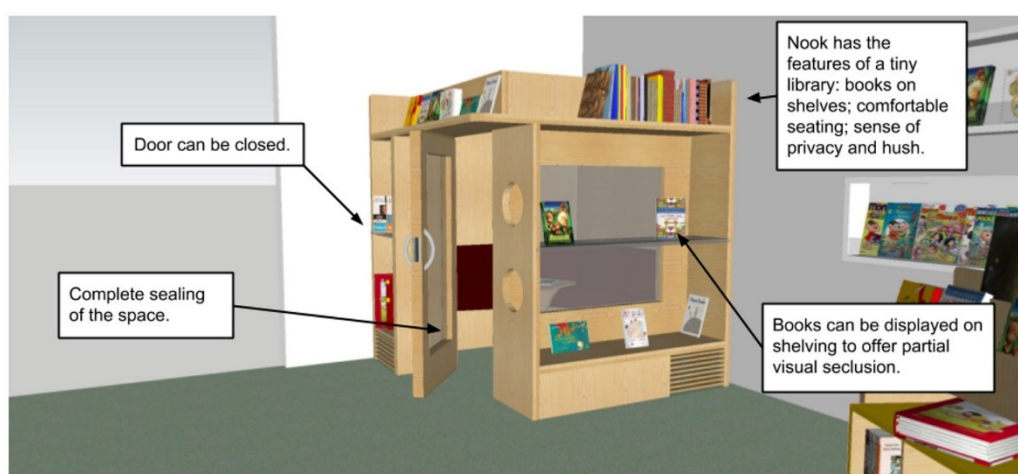
Figure 4.2: Nook visualization

The minimization of the novice reader's vulnerability to distraction and interruption was a fundamental attribute of the nook design in phase one. The conception of the nook as a tiny, enclosed library -- a room within a room -- was devised to offer the beginner reader a space in which concentration could be heightened and distraction diminished.

Through the repeated practice of reading, expert readers learn to become sufficiently habituated to the physicality of reading to lose awareness of their own bodies when they read, even in apparently inhospitable circumstances. McLaughlin argues that "[r]eading is the body tricking itself into thinking there is something other than the body doing the reading" (2015, p. 115) to the extent that reading as an activity *appears* to be cognitive rather than physical. This may explain why researchers in the fields of literacy education and literary studies often fail to appreciate the physicality of reading. However, learning to read is a complex activity that involves the simultaneous mastery of physical procedures: of turning pages; following the direction of the text correctly with one's eyes; articulating words with tongue, lips and mouth; and stilling the limbs so as not to disrupt the other elements of the activity. Young children, unlike adults, demonstrate an awareness of the physicality of reading when asked to describe what it means to read (Kiiveri & Määttä, 2012). They are also highly sensitive to distraction and interruption when learning to read (Flagg-Williams et al., 2011; Klatte et al., 2013).

By removing or, at worst, filtering out surrounding distractions, the nook attempts to enhance the concentration of the reader. To this end, transparent walls create a protective barrier between the beginner reader and the rest of the classroom and the placement of display shelves over the exterior walls also provides camouflage for the reader without depriving teaching staff of the ability to monitor the welfare of the children inside the nook.

Separation from the hurly-burly of the classroom also offers the potential for the inhabitants of the nook to experience it as a liminal space at the edge of classroom routines. The nook may even suggest an alternative pedagogy for reading with a relaxation of postural discipline of the body when inside. Like the geography store cupboard, described by Jones (2008) and Anderson and Jones (2009), see 2.3.4.5, and the welfare room

documented by Clark, see section 2.3.4.4, the nook could be perceived as a "less visible territory" (Clark, 2010a, p. 778) as well as a less audible territory within the classroom.

The cuboid design of the nook not only allows it to fit into the corner space of a classroom more efficiently than a curved or rounded form but also reduces the possibility of distraction from the rest of the classroom, since two of the sides of the nook face towards a wall rather than into the open space around them.

The use of shelving on the exterior walls of the nook provides the facility for the display of large picture books that can be easily damaged when not properly stored. This display of books also has the secondary affordance of decreasing the sense of being watched by others while reading. Anderson (2009) suggests that children construct a reading identity for themselves during reading sessions, which may lead them to dissemble or disconnect from reading activities when they feel others may judge their reading to be inadequate. Although Anderson's study involved older children in key stage 2, Kiiveri and Määttä's 2012 paper that reports upon the perception of younger children of themselves as readers (or as non-readers) lead me to conclude that design for reading for *all* readers in the primary school, of whatever age, should recognize that they may feel self-conscious about being observed while reading and learning to read. The display of picture books on its exterior walls also characterizes the nook as a tiny library space, giving its inhabitants a vantage point from which to look out. Section 2.2.2 provides additional information about the influence of Bachelard (2014) and Hertzberger (2008) upon this feature of the nook.

Features of the nook were intended to minimize the distraction, interruption and observation of beginner readers, i.e. the placement of the nook in a corner; a separation from the classroom; and shelving to partially obscure the inhabitants of the nook from onlookers, raised two further points for investigation in phase two. The first was practical and related to whether there would be a sufficiently large floor area in each of the seven schools to accommodate the nook. The second point addressed the extent to which teachers felt comfortable with a space in which children in the Year One classroom could be partially concealed or hidden.

4.1.2 Feature B: physical comfort and freedom of movement
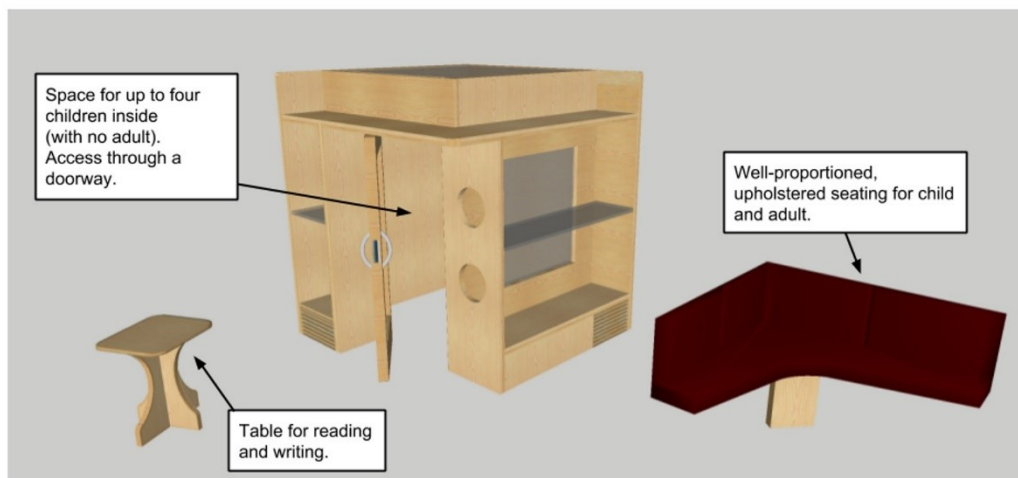
Figure 4.3: Nook visualization

Young children use their bodies and senses to explore the world around them (Bartos, 2013; Cele, 2006) and so the nook was conceived as an artefact made from high-quality materials that would appeal to the senses, with sufficient room inside for children to sit, stand or lie-down. Architectural influences in this respect were the Medds, who recognized the importance of providing spaces where children could rest, reflect and find a comfortable posture for themselves, see 2.3.4.1, and Hertzberger, who conceived of the idea of "cupboardness": a cosy, comfortable, semi-secluded space, in his school designs.

Although the dimensions of the nook had not been specified at this stage of the design process, it was decided that it should be large enough to allow one adult and a child to sit comfortably side by side on the bench or for four children to sit together on the bench or the floor.

The well-padded upholstery of the bench resembles that of a booth in an American diner or the front seat of a vintage car. The provision of a space where postural support, in the form of a comfortable seat, is available for children but not mandatory when reading for pleasure encourages a choice of postures and a freedom from the disciplinary mode of sitting,

adopted in some schools during carpet-based activities (McCarter & Woolner, 2011; Harden, 2012), see 2.3.6.4.

The doorway of the nook was designed to be accessible to adults so that they could enter the nook and sit comfortably on the bench without bumping their heads. However, the nook is child-scaled and not designed for adults to stand inside.

Public and private library buildings and rooms designed for scholars often provide well-proportioned spaces with supportive furniture made from high-quality materials and, in the case of Labrouste's redesign of the Bibliothèque Nationale, even with tiny heaters to keep readers' feet warm, see 2.3.1. The nook is intended to offer a similar level of thoughtful design and attention to detail to beginner readers in schools to offer them a high-quality experience of reading.

A small, purpose-built, removable table was designed to be used inside the nook as a surface for resting books, paper and pencils for reading and writing. The table was added in recognition of the reciprocity between learning to read and learning to write (Clay, 2001) so that reading tuition could also include a provision for writing.

4.1.3 Feature C: acoustic separation and quiet

Two-way acoustic separation promotes reading aloud without interrupting others or being interrupted by noise.

Provides a quiet area of the classroom where none exists.

Figure 4.4: Nook visualization

The nook offers an alternative space inside the classroom that is quiet and undisturbed. Acoustic separation from the classroom provides a space in which children can hear clearly when they are learning to read. This feature of the nook is enhanced by a sealed door and Perspex roof. The acoustic separation is two-way: readers inside are protected from noisy interruptions but also when they read aloud inside the nook, their voices do not interrupt other classroom activities. In this way, the nook benefits the whole class and not only the children who read inside it.

Learning in an acoustically protected space allows readers with hearing loss to make grapheme-phoneme correspondences, i.e. matching written symbols with corresponding sounds, more easily. Shield and Dockrell (2003) contend that around 40 per cent of young children in school in the UK have chronic or permanent hearing loss that is likely to disrupt their ability to learn at any one time. Additionally, evidence from the fields of audiology and school design suggest that young children are not only more prone to interruption than older children and adults but also that noise particularly affects their ability to read. Moreover, certain cohorts of children are especially vulnerable to the effects of noise upon their learning, for example, children with SEN or who are learning English as a second or third language, see 2.4.3.

Morrow and Weinstein identify "a location in a quiet area of the classroom" as a fundamental feature of a "well-designed library corner" (Morrow & Weinstein, 1982, p. 135). However, since sound is omnidirectional and contemporary English classrooms can be expected to have a cohort of around thirty children in a room that may be small, relative to the number of children, quiet areas of the classroom may be difficult to create. Consequently, the nook aims to create a quiet corner of the classroom where none exists.

During my fieldwork in phase two, I documented small, secluded spaces where beginner readers could read and evaluated their qualities, including the promotion of auditory seclusion.

4.1.4 Feature D: the functionality of the nook
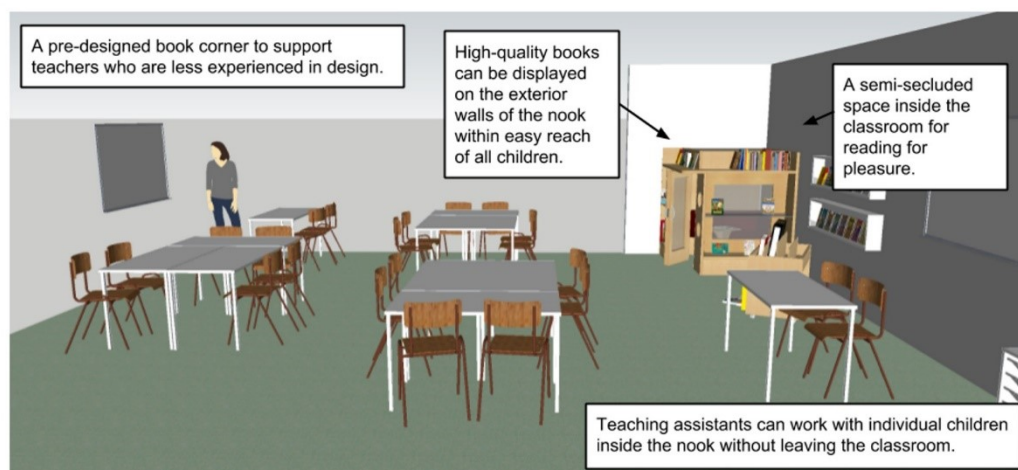
Figure 4.5: Nook visualization

In this first iteration, the nook has two primary functions: firstly, as a separate, semi-secluded space in which children can enjoy reading for pleasure and secondly, as a teaching space, located inside or beyond the classroom, to which children can be withdrawn for additional tuition or to share a book with an adult. The potential for installation beyond the classroom was a response to literature that suggested that a new national method of procurement of schools might result in a reduction in small-group rooms, see 2.4.1, and to my own experiences as a reading teacher in five London schools in the 2000s and 2010s, in which a lack of availability of small-group rooms often meant children were withdrawn to read in corridors and assembly halls.

The provision of a nook as a withdrawal space within the classroom allows teaching assistants the opportunity to remain inside the classroom to give additional tuition in reading, as observed in School F, see 4.2.3.2. Not only might this result in a more inclusive pedagogy for all children but there are also many advantages to having a second adult in the classroom, particularly when teachers need assistance with situations that arise unexpectedly in the classroom, such as medical issues.

As I have already mentioned with respect to Feature A, above, the nook's additional function as a tiny library for the display and storage of books was also an important feature

and offers an ease of access to high-quality reading material for children who can reach a favourite book from its shelves. This feature made it particularly suitable as a replacement book corner for the classroom and were it to function as a teaching space in a corridor or breakout space, the ready availability of books on its shelves may encourage a rotation of high-quality books between classes, with new books being showcased on its shelves.

4.2 Phase two: empirical research

To answer Research question 2, "Where do beginner readers read in the English primary school?", empirical research was conducted in seven schools. The rationale for this research was two-fold: to fill a gap in the field of educational research about the sites and locations where children read in school; and to note aspects of practice, routine or design in school that challenged the viability of the first iteration of a nook and that supported its redesign.

The nook prototype was developed after the school visits during phase three of the study.

Findings about the type of spaces observed; the qualities of these spaces; where readers read in each of the schools and who reads where in these schools; and the artefacts and arrangements that teachers design for reading were explored through four subsidiary questions (A-D) that emerged during phase two. The findings are detailed below as a response to these questions, with B and C addressed simultaneously rather than consecutively.

4.2.1 Types of space where beginner readers read in school

These findings are a response to Question A: "In which types of space do beginner readers read?" During the study, I observed children reading in the spaces indicated in Figure 4.6
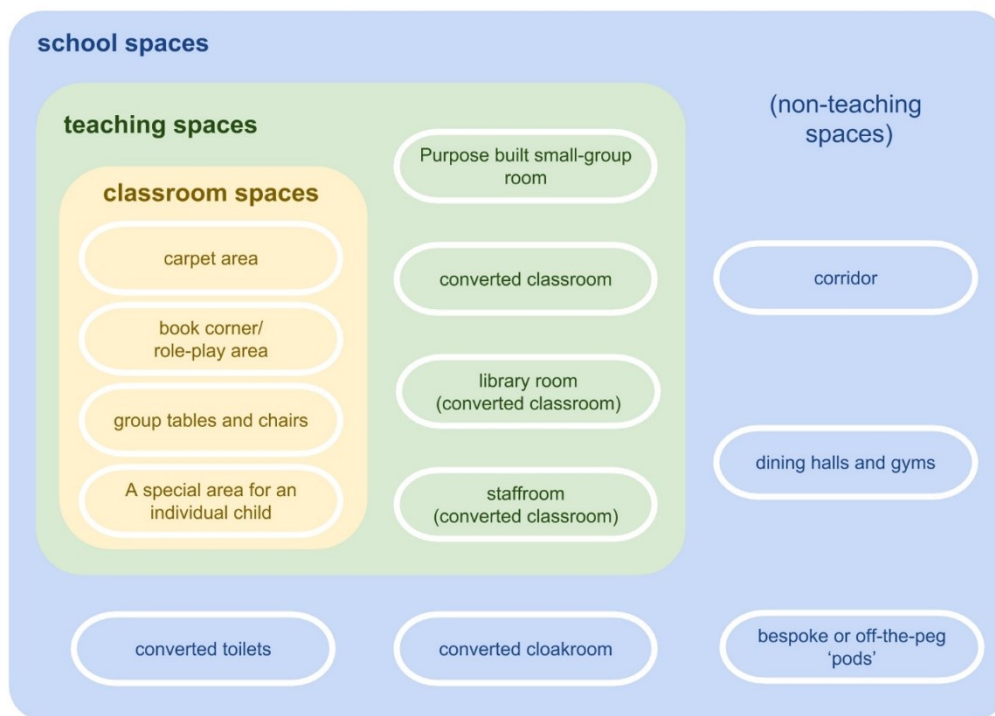
Figure 4.6: Types of space where beginner readers read in school

Figure 4.6 offers a taxonomy of distinct spaces where beginner readers read, drawing on observation and evidence from readers and teaching staff in schools. Spaces in which none of the readers reported reading, such as the toilets, and spaces that were out of bounds for pupils, like school kitchens, are not represented. Types of space that were not encountered in any of the seven schools, such as a purpose-built library with integrated shelving and furniture, are also omitted.

Figure 4.6 is non-hierarchical in its representation of types of space. The number of times children had read in each space was not measured and children were not asked whether they read once or regularly in a particular location. However, the ability group as determined by the class teacher of each child was recorded in conjunction with the spaces where they read.

The differentiation made in Figure 4.6 between teaching and non-teaching spaces does not pertain to whether spaces are used or not used for teaching but to a designation of space

that is used by the architects of school buildings. Teaching spaces refer to classroom spaces and to rooms that are not designated as working classrooms, such as small-group rooms, but which conform to the same regulatory standards. Non-teaching spaces, as explained in section 2.4 are designed to different performance standards from teaching spaces and this is particularly relevant to reading in terms of acoustic design.

Practices and routines for reading have been woven into the descriptions below of the spaces where beginner readers read.

4.2.2 The qualities of designed spaces and teacher design for reading

Question B: What are the qualities and attributes of the designed spaces and areas where beginner readers read?
Question C: How do members of the teaching staff design for reading for Year One pupils?

Questions B and C are inextricably linked because teaching staff, as well as children, are participants of this study and therefore, many of the qualities reported upon are drawn from comments made by staff. Findings are grouped within two overarching categories, "in the classroom" and "beyond the classroom", and then arranged at a more granular level by the type of space within those categories where child-participants indicated they had read. It is also indicated whether these spaces are teaching space", where standards for acoustics, lighting etc. are compatible with teaching and learning activities, or non-teaching spaces, such as dining rooms, where these standards are lower.

Additional comments and explanations about the routines and practices that contribute to the qualities of design of these spaces are included as an important aspect of the findings.

4.2.2.1 In the classroom

Seven Year One classroom spaces were observed in seven separate schools. The smallest class had 27 children on roll and the largest had 32, although not every child was present on each day of the study. Each class in the study had at least one teaching assistant and three classes also had a special needs assistant, each working with one child with a statement of special educational needs.

Beginner readers were observed reading in each classroom and every child's tour of the school included at least three different areas of their own classroom where they read.

School staff participating in the study, including senior members of staff, teachers and teaching assistants without exception regarded the spatial arrangement of the classroom as the responsibility of the class teacher. The spatial arrangements made by teachers for reading in the classroom were influenced by factors such as the size and shape of the room; the location of fixtures and fittings, the budget for and availability of furniture; and the policies, practices and routines of the school.

When designing for reading in the classroom, teachers are also designing for teaching and learning; for supervision or surveillance; for assessment; for discipline, reward and punishment; for the storage and display of books; for the designation of areas for reading for pleasure; for the comfort of children and for their own comfort; and for the requirements and needs of individual children. Teachers described their motivation for designing for reading in terms of their own love of reading and their own experiences of reading as a child. However, they must also design for reading to please adults visiting the classroom including parents, governors, senior management and school inspectors.

Beyond the classroom, teachers may be responsible for design for reading in other areas of the school building, for example the school library, depending on their curriculum management responsibilities. Class teachers are, however, responsible for the management

of the assessment of reading for all pupils and accountable for the progress of the children wherever they are being taught within the school.

Teachers in Year One design for reading in their classrooms, as they do for maths, topic work and other activities, such as painting and role-play. Design for reading includes the spatial arrangement of grouped and individual tables and chairs; of book corners, bookshelves and small, compartmentalized, open storage units known as "kinderboxes"; of soft furnishings. These items can be used to organise and to designate zones for the teaching of reading and reading for enjoyment in the classroom.

In addition to the temporal aspect of design for daily or weekly timetabled reading routines, such as silent reading sessions or guided reading, there is also a discernible, seasonal and cyclical aspect to design for reading in the primary classroom. At the end of every school year, classrooms are rearranged so they can be cleaned over the summer holidays and all moveable furniture is placed in the centre of the classroom to allow the edges of the room and carpets to be cleaned thoroughly. In September, at the beginning of each school year, teachers set up their classroom furniture before the arrival of the children. Classroom assistants, unlike teachers, are not paid over the school holidays and are not generally available to assist with the rearrangement of furniture. If they are talented designers, however, like the classroom assistant in School F, design tasks in the classroom may be delegated to them by the teacher once they return to work.

A redesign or rearrangement of classroom furniture may also be prompted by the advent of the new financial year in April. Literacy Co-ordinators may have access to an annual budget for books and for furniture to support reading, such as display shelves and reading boxes. In some schools, the same style and items of furniture are replicated in several classes, for example in School S, which opened on a new site in 2012, the same type of screen was used to boundary the book corner area throughout the whole school.

Teachers expressed a range of feelings about their ability to organize their classroom and to design for reading. Some told me they struggled with the responsibility of planning the

arrangement of furniture and once the classroom had been set up, they left everything in much the same place for the remainder of the school year while others enjoyed regularly reconfiguring the classroom throughout the year. New teachers often feel ill-prepared to design their classrooms at the beginning of the year and several teachers reported this lack of training in during their year-long postgraduate certification or three-year Bachelor of Education course. One of the two Year One class teachers in School T ascribed the lack of design training to the amount of other activities that needed to be covered during her Postgraduate Certificate of Education (PGCE) course:

> It was like a lecture for two hours right at the end of the year once we'd done our school placements. (...) I think we had a two-hour lecture about classroom environments and it was more directed about 'When you get your new classroom, this is what you need to have in it'.

Another teacher, however, remembered the benefit of a regular weekly session in college that did include design for reading in the classroom:

> When I was doing my PGCE every week we had an English lecturer who, for our very last session of the week we'd all take a book in, a picture book, to help us get used to reading out loud but also so we could find out more about books. And as part of that we had to design our dream reading area and I think mine was like half the classroom! And when I went into class I realized I didn't have that much space and so I went to IKEA. I bought cushions, a little car mat and tried to make it into as comfortable and as colourful an area as possible.

The Literacy Co-ordinator in School H was blunt in her assessment of teacher design for classrooms: "I don't think many teachers know about space. I think they know that they like teaching in groups or in rows."

This may be because teachers who have minimal training in design often mimic spatial designs that they are familiar with rather than trying different arrangements. The newly

qualified teacher (NQT) in School T used this method when rising to the challenge of setting up a classroom with no training in how to do so:

> When I started, I took over from somebody and so when I came in at the end of the year I took pictures of her classroom, so when I came in in September and everything was in the middle of the room (...) and it's just like a blank canvas. My mum [who was also a teacher] came to help me and I just put everything back where she [the previous teacher] had it, from the pictures (...) and I've gradually changed things around. Because you really don't, it's only from testing things out that you think about how things work. And actually, some of it you can't change, like I don't like my white board being there (…) and if I asked to change it I'm sure someone would tell me where to go!

The Literacy Co-ordinator in School H explained that she continued to benefit from the design expertise of a family member and that this expertise was then transmitted throughout the school:

> Certainly, having an architect-husband helps me. He tells me about the most effective use of the classroom space. He will angle things and put things where I wouldn't necessarily have done. I used to have my desk positioned so that I could see the smartboard but with my back to the children and he turned the desk around by 90 degrees. It's such a simple idea and now everyone in the school does that.

Design for reading within the classroom was not consistent between classes in the same cohort and this may be due to the teacher's understanding of and flair for design. Even when an investment was made in the same piece of furniture for the classroom book corner, such as the wooden screen evident in every classroom in School S, the arrangement and decoration of the piece varied between classrooms. In School F, the discrepancy between the expertise in design for reading in the two Year One classrooms was marked: the participating class had a bespoke book corner and a *Percy the Park Keeper* themed role-play hut while the second had a few book boxes, cushions and beanbags. In every school, design for reading was heavily dependent on the design proficiency of the teacher and their

support network. I wish to make no value judgements here about teachers' design expertise, only to draw attention to a lack of support for some teachers in schools where expertise is lacking.

Reading takes place in several areas within the classroom, each of which was observed in detail. Findings will be presented for each of these areas below. Four types of area common to all schools were identified by children participating in the study as spaces where they read in the classroom. They are reading tables (grouped by ability); a designated carpet or rug area on the floor; a book corner or role-play area; and an individual table with two chairs: one for a child with special educational needs and one for the adult who is teaching or supporting them.

Group tables

Figure 4.7: Group tables in School Q

Tables and chairs in each of the Year One classrooms were of the same scale, proportion and dimension for each child and smaller than the furniture provided for children in key stage 2. Although the spatial arrangement of tables and chairs (for children) varied according to the dimensions and affordances of the classroom, the number of children

seated at each table and the placement of that table within the classroom in each of the schools participating in the study, was to some extent dictated by the ability grouping of children in the class in the curriculum subjects of reading, writing and maths. This method of grouping children by ability, also known as streaming, was common to each Year One class participating in the study.

As I explained in 3.5.2.4, groups of tables seating between four and eight children but most frequently arranged for groups of six were organized by ability group. These were described to me by teaching staff as 'top, middle or bottom' or 'higher, middle and lower' ability. Children were sometimes allocated different tables for different curriculum subjects, for example, in School Q, a child might be placed at the 'badgers' table for reading and writing at the back of the classroom but at 'tractors' closer to the front for maths.

Following a teaching session to the whole class on the carpet, all children worked on activities individually or collaboratively at their designated tables. Seats were positioned to allow children to see the interactive smart board clearly. Each table was subject to the same, general, physical and material conditions of the classrooms. Although some tables were nearer to windows, each classroom was lit by artificial overhead lighting which was turned on throughout the day, even in the summer on a bright day.

Some children preferred to read at their tables rather than in more apparently comfortable, secluded areas. In School P, a child who was standing on the carpet area and perceived by the teacher to be distracting others, was told sternly, "C, go to your reading table!" Child C was a participant in the study, a fluent reader who could read books silently rather than aloud. At the beginning of our tour of the school, she had declared, "I am the only one in this class who reads chapter books" although this was not actually the case. She explained to me, following this incident with the teacher, that she did not perceive reading at her table as a sanction: "I like reading at my table, not in the reading corner or on the carpet. That is for babies!" Her comments suggested that reading at a table, where everyone could see she was reading a thick chapter book in silence, was something she associated with a high-status activity and that she was content when others noticed this. The same child also

complained that other children were sometimes "noisy" in the reading corner and caused disruption "they're changing their books all the time."

Research by McCarter and Woolner (2011) indicates that there may be a mismatch between what teachers think about a space, what children think about the same space and what happens in that space. Child C showed a clear preference for reading at a group table rather than in the book corner despite the teacher's efforts to make the book corner a welcoming, comfortable location for reading. However, this may have been because as a fluent reader, Child C could already lose herself in a book and no longer needed help to read, or to read aloud.

The Literacy Manager in School O reflected that children often shy away from reading aloud when they are aware that they are being overheard by visitors to the classroom:

> I think that where other people can hear them, um, you could walk past this classroom and there'll be a child reading, somebody will walk in and they'll go quiet, they'll walk out and they'll start to read louder again.

This comment echoes the research findings of Anderson (2009), reported in phase one of the study, that young children become self-conscious when they believe that their reading abilities are being assessed or judged by others.

Group tables and book corners (during guided reading sessions)

Guided reading, sometimes known as a reading carousel, was a daily routine activity that took place in every classroom. It has significant spatial implications for design for reading because children are organized into five groups, of which only one or two groups are directly supervised. In guided reading sessions, the class teacher and a teaching assistant, if available, listened to and assessed one of these alternating groups of children every day. In some schools, the teaching assistant withdrew their designated group of readers to an area

beyond the classroom during these sessions. Two further groups would usually undertake independent reading and writing or drawing activities at their tables while a fifth group would be directed to choose books to share with each other or read independently in the book corner or on the carpet.

The class teacher in School P reported that keeping a focus on the teaching and assessment of one group of readers during guided reading sessions in the classroom while simultaneously supervising the remainder of the class, who were not always able to work quietly together in groups, was a particularly stressful activity to manage:

> It's all about noise! You're sitting with one group and you have to spend all your time telling the other groups to shhhhh. There's five groups and even if you have the TA [teaching assistant] working with one group and a group in the reading corner, it doesn't work. How can you teach them to read? You can't really. Even the top group, they're up and down, up and down all the time.

Guided reading sessions in all of the classes observed exhibited a clash of pedagogical styles. While the class teacher was absorbed in carrying out reading assessments in one area of the room for a period of half an hour, the other members of the class, who we should remember are aged five and six, were expected to complete their activities quietly. The group of children in the book corner or on the carpet with a box of books, however, were being invited to select what they read and how they read it. They also appeared to have a freedom of movement not generally afforded to them during lessons. However, while the children's interpretation of this pedagogical style, as I observed in several schools, was of a more relaxed, enjoyable approach to reading, the expectation of the teacher was for this group of children to be still, silent and not interrupt or disrupt any other members of the class. Spatial design for guided reading was potentially problematic and not well thought-out in several classrooms since the book corner was not designed to accommodate six children in comfort and seclusion from others. In School F, however, having two withdrawal areas inside the classroom (*Percy the Park Keeper's Hut* and the *polar explorers' book corner*) supported this relaxed pedagogy for not one but two groups of children. In this

classroom, design for reading supported the guided reading sessions. Conversations with other teachers about guided reading led me to understand that within the culture of their schools, it was not acceptable to raise complaints about the difficulty of running a daily guided reading session or to ask for help, since this was seen to reflect their competency as teachers, even though most teachers I observed were challenged by the management of these sessions. These observations and conversations led me to prioritize the design of the reading nook to offer a quiet, secluded space in the classroom that could accommodate a group of up to six children with the provision of easy access to reading books for these guided reading sessions.

For at least one teacher taking part in the study, an increased formality of the layout of tables and chairs for a programme of regular lessons in Year One, including guided reading, changed the spatial design of her classroom. In School Q, the Year One class teacher felt that her classroom had become overcrowded, with adverse consequences for the book corner:

> This was a reception classroom last year - I taught the same class in here - and we had a book corner and a role-play area in here. But now they all have to be at desks to write, there just isn't room for a book corner, so I've had to move it into the other room (an annex to the classroom). Once the tables came in here, it suddenly felt really cramped.

The prevalence of guided reading in English schools may have prompted and certainly perpetuates the spatial arrangement of children at streamed tables even when these children are beginner readers of only five or six years of age.

The carpet area

The spatial arrangement of zones for reading in each of the participating Year One classrooms included a designated area of flooring for "carpet-time" activities, such as

phonics lessons (McCarter & Woolner, 2011; Harden, 2012). Some, but not all, classroom carpet areas featured a rug decorated with squares or symbols on which children were given a designated spot to sit. The rules associated with this spatial arrangement were relaxed during periods of daily guided reading for at least one group of children who could choose their own space to sit on the carpet (or in the book corner) to read independently. Children in some classes were also permitted to read in places of their own choice like the carpet area while others were finishing off their work. This area of the classroom is also discussed in Chapter Two, see 2.3.6.4.

Book corners

Figure 4.8: *Polar explorers'* book corner in School F

Every classroom in the study contained an area described by teaching staff and pupils alike as "the book corner" or "the reading corner" and these terms were used interchangeably. Fractor et al. (1993) refer to the North American equivalent term, "the classroom library", as "a focal area within the classroom where books are easily accessible to students" (p. 477). In England, however, book corners are generally located in one corner of the classroom and

only the one in School F was located elsewhere, although teaching staff and pupils still referred to it as a book *corner.*

Each book corner observed in the study was a temporary, improvised space rather than an architectural feature of the original building and none of the structures was fixed to the wall or floor for stability. Permanent and temporary fixtures and fittings in the classroom, such as white boards, sinks and radiators influenced the choice of location of the book corner in each case, as did the proximity of the carpet area used by the teacher. In general, teachers located their book corner away from this teaching area.

Qualities such as a more intimate lighting design or acoustic separation were not in evidence in any of the teacher-designed book corners. The only attempt to create different sound-space in a book corner was offered by the availability of headphones and a machine for story tapes which was a feature of two of the book corners. Lighting was undifferentiated from the rest of the classroom and none of the book corners had a covering or roof that changed the lighting of the area, although the pure-white *polar explorers'* book corner reflected the light from above and the bay windows behind it to create a bright space.

Several teachers had paid for new or second-hand items of furniture and furnishings for their book corner out of their own pocket. There were recognisable, low-budget decorations from one furniture retailer apparent in their designs in several of the schools, with one of the teachers remarking, "Teachers should all have shares in IKEA!"

None of the children in any of the participating classes was responsible for any aspect of the design of their classroom book corner and none of the book corners were decorated with children's own work, unlike other areas of the classroom. Indeed, this absence of children's writing and drawing was a facet of the design of each book corner that differentiated it from other areas of the classroom. Furthermore, common to all of the book corners observed was an absence of or reduction in the explicit visual messages and reminders to children about learning, for example, the spellings, topic words and maths posters that were a

feature of all other areas of the classroom. In this respect, the book corner represented a different type of space, with a relaxing absence of learning mantras and mottos. This suggestion of a relaxation of the imperative to learn was also reflected in the choice of soft furnishings, of bright fabrics and of soft toys, which were also largely limited to this area of the classroom.

Figure 4.9: Soft toys in the book corner in Schools O and Q

Fractor et al. suggest that even to qualify as a "basic" library corner in a classroom, the demarcated space must be sufficiently large to accommodate a minimum of three children (Fractor et al., 1993, p.479). According to my measurements, book corners in participating classrooms ranged from less than one metre squared, accommodating a maximum of two children, to around nine metres squared, with the potential to accommodate at least 20

children. Only one of the book corners, in School S, would fail to reach the "basic" classification within Fractor's criterion whilst schools F, P, and T would qualify as "good" and schools O, H and Q would be deemed "excellent" (although the book corner in Q was in an annex). The largest of the book corners observed in the study were unsecluded and open to distraction. Although the Literacy Co-ordinator in School Q told me that she aspired to a much bigger area for her book corner than was possible within her current classroom: "if space wasn't an option, I'd have quite a significant area that was cosy and comfy, inviting with lots of pillows." However, teachers' opinions varied about how spacious they would ideally like their book corner to be. The Literacy Manager in School H suggested that she would be content with a comparatively small area for her book corner remarking, "You can enjoy reading in tiny spaces". In School F, the teacher and teaching assistant told me that they chose to allocate a relatively small area to heighten the "intimate" and "cosy" qualities of the space, even though their classroom was large enough to accommodate a bigger design. By contrast, in School T, where the Year One book corner observed comprised almost a fifth of the entire classroom space, the space felt open and bare, with no sense of cosiness or intimacy.

Figure 4.10: Furniture in the reading corner, School T

Furniture and furnishings in the book corners of the selected classrooms to support children's bodies ranged from cushions and beanbags on the floor to a child-sized bench and formal tables and chairs for teaching. Chairs and stools were soft or wooden and eclectic rather than uniform in design.

In conversation, several teachers used the words "comfortable" and "cosy" when describing their ideal book corner and every book corner included at least one item of soft furnishings, either fabric, pillows or cushions, in their design.

In phase one of this study, a cocoon-like protection from interruption was identified as an ideal quality of the environment for a beginner reader. Only one of the class teachers (School H) offered a verbal confirmation of this ideal, telling me, "children should be on their own and just enjoy reading without the constant interruptions from an adult."

Design for partial visual seclusion in the classroom reading corner was accomplished in School P through the placement of a bookshelf to create a third wall for the reader so that their view out and other's views into the area was blocked on three sides.

Figure 4.11: Book corner, School P

Visual separation from the teacher's desk and the carpet area was also a feature of this area. When I sat in this book corner, facing outwards, I felt a sense of separation from the rest of the classroom, enhanced by the buffer of book shelves to my right and the classroom wall to my left.

The newly qualified class teacher in School T expressed the opinion that a lack of supervision that would result from having hidden corners in the classroom might be a problematic because "that's one thing you have to have in a classroom, especially at this age you have to be able to see where everything, everyone is." However, the Literacy Co-ordinator in School H suggested that if expectations for children's behaviour were high, then they would not need constant supervision whilst in the book corner:

> It's all about the intention really (...) Basically you're saying to children, 'This is your place to escape and I trust you to know why you need to behave there. What you look after will then be looked after by someone else for you too.'

Book corners may be used as a temporary exclusion or "time-out" zone, separating the child from the rest of their classmates. In School O, I observed a child being sent to the book corner for five minutes as a sanction. The potential affordance of the nook as a space for punishment or reward is an aspect of the design that I focused upon in further research after the completion of this study, however, during this phase of the project, I was aware that I might not necessarily witness the book corner being used to these ends during such short (two-day) visits to each school.

In School P, I observed a child with autism being guided to the book corner by the special needs assistant to read independently while the rest of the class was being registered. The special needs assistant commented that this child, who was not one of the participants of the study, had not wanted to visit the book corner until the beginning of the summer term but now enjoyed spending time there amongst the books every day. This book corner had some visual seclusion but no auditory seclusion and consequently, the child also responded to the noises of the class around her. The special needs assistant commented: "It would be

ideal for her if the book corner could be like a den, with soft colours and not too much noise."

In September 2015, I visited a special school in London as part of the annual Open Architecture weekend. I was given a tour of the school by the head teacher, who pointed out three alcoves, inset into the wall of the library, and entirely covered with artificial grass.

Figure 4.12: Grass alcove, special school

The head teacher observed that when children were lining up to go outside to play at break time, they often chose to sit in these grassy nooks if they felt agitated or upset and would find the texture of the grass and the feeling a sense of separation from the other children soothing. The concept of the nook as a calming space that is inclusive for all members of the class was influenced by the design of these alcoves.

The storage and display of books

The fluency and confidence with which children read texts in Year One varies from child to child and consequently a wide variety of books are required, including small chapter books,

large and small non-fiction texts and paperback picture books of multiple sizes and thickness. These picture books are notoriously difficult to display and store as they generally have thin spines and their pages tear easily. Additionally, these books may be difficult to identify even by fluent readers who cannot read their titles unless they are stored with their front covers visible as the spines of picture books are generally very narrow.

Figure 4.13: Book storage in Schools H and T

Poor furniture for storage and display can limit the choice of books for the Year One reader and, it could be argued, be detrimental to their enjoyment of reading at school. Selecting a book that has been crammed into a storage box may be difficult for a child (or adult) to

manage. The class teacher in School Q suggested that the Senior Leadership Team (SLT) should purchase furniture for every classroom to establish a minimum standard of book corner, including "robust" bookshelves for each classroom. Teaching staff in four of the seven schools expressed the opinion that the furniture available to them for their classroom book corners was not fit for purpose. Complaints were made about poorly-designed kinderboxes and a lack of display that meant that their book corners often looked "chaotic" and "messy".

Books were highly valued by teaching staff in all seven schools and a wide-variety of new, high-quality texts were abundant in each of the schools. Each teacher demonstrated a consistent level of care and respect for books to the children in their classes when reading stories and handling books. However, a lack of adequate storage and display meant that books were often damaged and torn, which annoyed and frustrated teachers. In four of the seven classrooms, there was a lack of connection between the teachers' obvious passion for children's literature and their ability to reflect this in their organization and display of the books that belonged to the class.

Figure 4.14: Soft toys

At least one soft toy was to be found in each book corner. My assumption was that toys had been placed in the area to enhance feelings of cosiness and comfort for the children but teacher in School Q explained that she had introduced a toy to the area so that children could role play reading to others and always had someone to read with, "Toys are good! I have a bear and children can read their story to the bear." The provision of soft toys, even in the most formal of book corners, such as School O, suggests that a familiar object associated with the home, can offer reassurance and comfort.

The book corner is viewed by teachers as an essential feature of the Year One classroom. The Literacy Manager in School O emphasized the importance of creating a discrete, designed area for reading to offer the children a choice of reading material:

> You're not telling them what to read: they get to choose. And the child that struggles can go in and pick up *any* book and sit there and they can open it up and read it, even if they're not looking at the words they can sit and they can read. And you see them with one another reading to one another too, or telling the story.

Even when they perceive their own book corner to be less than adequate, teachers participating in the study all had ideas about improving their book corner if they had sufficient money, time and design expertise to do so.

Teachers are often acutely aware of their own deficiencies as classroom designers and anxious that adults who visit their classrooms will judge their book corner design harshly. In four of the seven schools visited, teachers expressed embarrassment and even apologised to me for the poor design of their own book corner. Two of the teachers ascribed this poor design to a lack of time and the pressing need for marking, assessment and other teaching tasks. The other two attributed the messiness of reading areas to the lack of furniture for the storage and display of books. In School F, where teaching staff were proud of the design of their book corner, they instigated a conversation about the design and how much the children valued it as soon as I entered the classroom on the first morning. Teachers in every school spontaneously expressed a love of reading and of the sharing of favourite books with

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children and this was often at odds with their frustration or sense of shame in having a book corner that did not match their aspirations.

The role-play area

I have adopted Harris's definition of role-play in the primary school as "shared pretend play between children in which they temporarily act out the part of someone else using pretend actions and utterances" (2000, p. 30). Distinct, themed areas of the classroom where role play can be experienced by children were apparent in two of the seven classrooms (Schools F and P) in the study. In both cases, these areas also contained a semi-formal area where children could read and write. In School F, *Percy the Park Keeper*'s hut, was used as a location for reading and lessons by the classroom assistant, who also designed the area.

Figure 4.15: Inside Percy the Park keeper's hut

During my visits, I did not observe areas being used by children for pretend play, however children in School F identified the role-play area as a space where they could enjoy reading a book for pleasure when they had a choice of where to read.

Both role-play areas were constructed in classrooms of schools built in 1887, with relatively spacious classrooms. The class teacher in School Q, which was built in 1911, remarked that there was not enough room in her classroom for a role-play area and a book corner. Her colleague in the neighbouring classroom referred to her recently-dismantled role-play area that had doubled as a book corner. This had been modelled on a Kenyan hut, inspired by a series of children's books that she had shared with the class, and could accommodate up to four children inside. However, this structure had left little room for a book corner, which comprised, in her words, "two broken plastic crates from Tesco" to store books and a small cushion in the corner next to the radiator.

Although role-play areas are still commonly seen in Reception classrooms and are sometimes a feature of Year One classrooms, they are less apparent further up the school. The class teacher in School O suggested that older children might also have a need for a role-play area but for seclusion rather than pretend play, "I've known Year 6 children who have visited the role-play area because they enjoy having that space to themselves" acknowledging the need for a quiet, separated space within the classroom to where children of all ages can choose to retreat.

A special area for an individual child

Figure 4.16: Protected spaces for individual children
in the classroom of Schools P and O

In three of the classrooms in the study, an individual desk and two chairs was provided for a special needs assistant and a child with special needs who might sometimes or always find it difficult to sit at a group table with other children. These areas were designed by the teacher or by the special needs assistant supporting the child with the intention of providing a formal learning space within the whole-class setting with sufficient room for the assistant to sit beside the child and support them with reading, writing and maths activities. In each case, the area was designated for the sole use of the child with special needs and their teaching assistant and the other children in the class respected this rule. When lining up for lunch, children in School O explained to me, without prompting, that this was R's 'special place' in the classroom.

In school P, the individual table and two chairs was partially hidden from view by screens and furniture that had been carefully placed to separate the area from the rest of the classroom. The chairs and tables were tucked into the corner, out of view. The semi-cloistered nature of the protected, separated area fulfilled the special needs assistant's aim of only having to leave the classroom when necessary so that inclusivity for the child could

be maximized. In Schools O and S, the equivalent area was open to the rest of the class and in closer proximity to the other group tables.

4.2.2.2 Beyond the classroom: teaching spaces

Purpose-built small-group rooms

Some beginner readers read in a small-group room in every school except for School F, with its specially designed role-play area that doubled as a secluded, separated teaching area. Children were withdrawn to these spaces individually or as part of a small group. In three schools (S, T and H), a purpose-built small-group room was available for this purpose. Group rooms were uniformly plain, to the point of bleak, in decoration, large enough to accommodate six children and a teacher and contained at least 1 large table or group of tables pushed together and chairs.

Figure 4.17: Windowless small-group room in School H

Three of the selected schools (H, T and S) had been rebuilt or substantially refurbished no more than five years before my visit and small-group rooms were a feature of each redesign. Of the other four schools, all of which were built before the end of the second

decade of the 20th century, two had small-group rooms that had been converted from the original cloakrooms (P and F) and one (School O) used converted classrooms for the individual or small-group reading tuition. School H also used one, small converted classroom as a small-group room, primarily for counselling children.

Small-group rooms, also known as resource rooms, are teaching spaces that are substantially smaller than a classroom and often used by support staff in Year One as a location for the teaching of reading and writing to small groups of children. According to Building Bulletin 99 (DES, 2006)

> these rooms usually allow an enclosed space for small groups (usually of around four to six pupils) with a teaching assistant, peripatetic teacher or counsellor, or for particular pupils to use as a quiet space. These group rooms, which are particularly important for the inclusion of pupils with SEN and disabilities, could be dispersed throughout the school and accessible directly from adjacent teaching spaces, as they may be needed to be used on an ad-hoc basis. Alternatively, they may be centrally located for ease of access for all.

As Williamson, architectural design advisor for the EFSA, indicated when I interviewed him in November 2015, the current recommendations in Building Bulletin 103 suggest that one small-group room should be available for three or four classes at any one time. This is expressed in the Building Bulletin as "at least one small group room for every 150 pupil places, to provide quiet, discrete facilities away from the classroom for a small number of pupils to work with a teaching assistant, peripatetic teacher or counsellor" (DfE/EFA, 2014). This seems a less than generous allocation since even if one were to estimate that only 20 per cent of beginner readers may need to be withdrawn from the classroom for extra tuition in Year One, this amounts to around 25 children, some with SEN, who may require individual tuition or support at any one time.

Teachers and teaching assistants in all of the schools taking part in this study reported that there was such a high demand for the use of small-group rooms that teaching staff were

regularly forced to seek alternative locations for teaching beyond these spaces, using non-teaching and circulatory spaces such as corridors and halls. Williamson believes that this is because recommendations in Building Bulletins are given for both minimum and maximum standards and that it is the minimum standards are liable to be adopted for reasons of cost and to become accepted as normal or appropriate: "If there's a minimum, that's the one that will be adhered to. That's the minimum but [...] governments come in saying 'There's a minimum, let's build to the minimum, why would we need anything else?'"

There is some flexibility built into the current procurement system for schools about the configurations and dimensions of spaces allocated for teaching and non-teaching areas. The baseline design that is currently preferred by the EFSA offers a choice between larger or smaller classrooms, break out spaces and fewer or more small-group rooms i.e. the net area and cost of the school building is fixed but permutations of the type of space can be managed. This places a responsibility on the shoulders of the stakeholder to decide how many small-group rooms are allocated to each cohort, if any, bearing in mind that this decision will have an impact on the area of the classrooms and availability of break-out spaces. This method of school procurement, as stated in a press release jointly issued on by the DfE and EFA (2012) is designed to reduce "wasted space – 15% [sic] for secondary and five per cent for primary schools" In April 2017, I talked to the head teacher of a new South London primary school building about the choices that he had made about the size of classrooms in relation to the number of small-group rooms. He told me that this had been a particularly difficult decision but because the cohort of children in each year group was above thirty, he had chosen a larger classroom area at the expense of more small-group rooms and a library space to which children could be withdrawn.

Small-group rooms are also used as spaces where pupils with SEN are taken for emotional and social support as well as for teaching activities. However, the limited availability of these spaces means that special needs assistants are often unable to use them on an ad-hoc basis if more than one child needs a calming, quiet space at the same time. The special needs assistant in School P lamented the lack of what she called a "break-out" room in the school where "people can just go if they need to". She reported that another child from a

neighbouring class with SEN was using the room regularly "and now they are in the resource room so no-one else can use it." This is an indication of the pressure placed on the availability of small-group rooms, not only from teaching assistants but also special needs assistants who must often find a quiet, unstimulating space quickly for a child in distress. Additionally, since these children may need to remain in the small-group room for some time so that they can have calm and quiet, other staff may not be able to use the room for teaching as planned and may need to find an alternative space.

In addition to a pressure on the availability of small-group rooms, teaching staff also noted an absence of small, quiet rooms. In School F, the classroom assistant noted, "Even though this school is a maze, there are no little rooms or cubby holes anywhere," while in School Q, the classroom assistant said, "We haven't got any little quiet spaces, no sensory areas, no multiple-use areas, nowhere to take him", referring to the areas of the school suitable for reading with one of the participants with special needs beyond the classroom. Again and again, in interviews with teaching staff, the lack of suitable spaces for reading and for calming spaces was a feature of the conversation about designing for beginner readers.

The teacher in School P, when discussing the difficulty of managing guided reading lessons in the classroom, also emphasized the requirement for additional teaching personnel, such as teaching assistants, to teach reading to pupils in need of additional support, otherwise the provision of such spaces is immaterial, "It would be great to have a room outside the classroom where a group could go … but who could they go with, volunteers? But then they don't always know how to teach reading."

Converted classrooms

Figure 4.18: Reading Recovery teacher training room in School O

In the former secondary school O, there was an abundance of classrooms that had been adapted into rooms where reading took place: sometimes informally for phonics lessons or more formally as a Reading Recovery teacher training room, divided in two by a wall into which a double-sided mirror had been installed so that teachers could observe a live reading lesson on the other side of the glass without being seen by the children who were reading. Both emergent readers had read in this space. None of the other schools had classrooms that were not being used as a home-base for a class.

Following the visit to School O, I attended the annual, national conference for Reading Recovery teachers where I spoke informally to several of them about the types of spaces and qualities of those spaces in their individual schools. Reading Recovery practice stipulates that an adult-sized table and chairs must be used in teaching sessions and that the adult must sit next to the child at the table rather than opposite them. A free-standing magnetic white board is also required for one activity during the lesson. None of the Reading Recovery teachers had to compete with support staff and reading volunteers on a daily basis to find a space in which to teach. However, although some of them reported teaching in converted classrooms with adequate space, they did not necessarily have access

to this space every day and others had improvised spaces to teach reading in converted, windowless toilets, at the back of the school stage or in corridors.

Library spaces

Figure 4.19: Library furniture in Schools P and T

The statutory National curriculum in England instructs that schools "should provide library facilities" (DfE, 2014) but no further detail about the nature of these facilities is suggested. Although there is no statutory requirement, six of the seven schools had a designated library room in operation while the parent-teacher association in School H was fundraising to create one.

Three of the libraries were situated in a converted gym or assembly hall (a non-teaching space) while three had been converted from, and were suitable for classroom teaching. The libraries in School F, S, P, Q and T were large enough to accommodate a whole class.

All of the participants in the study indicated that they had engaged in library visits to choose books with an adult and some additionally reported that they had read in the library area with a reading volunteer.

The libraries in School P, Q and T had been refurbished within the two years of the visit and children who used these libraries expressed a satisfaction with the new furniture, especially the comfortable seating arrangements.

The chair of governors in School P remembered the poor state of the library when she first began working at School P as a reading volunteer: "The books in there were sad and unloved, piled higgledy-piggledy. It was a room which was used to store miscellany: flip charts; screens; stacks of chairs." Children in Year One were not allowed to visit the library unaccompanied by an adult in any of the seven schools. However, the Reading Manager in School O imagined that if access to their library was to become more straightforward, then children might be able to visit the library in pairs together:

> We've got a Library (in the school) and it *is* used but it would be nice if it was … where our Library is, it's right downstairs, it's a little bit difficult to get to, you need a code so you have to be with an adult. It would be nice if it was more central in the school so that the children can just say, 'Oh, can I go to the Library and get a book?' and do it themselves a little bit more regularly rather than once or twice a week.

The Literacy Co-ordinator in School H suggested that having a library space without a librarian to run it did not make sense. As she explained:

> It's all very well to have library space but you need to have someone to manage it, to encourage the children to want to use it. Having seen school librarians in action -– they get authors in, they get book company freebies -– it's so beneficial. We used to have a library in this school that was out in the corridor and then it became electronic and all the children had codes, which they all lost and then nobody used the library. So by the time they got up to key stage 2, the teacher didn't have the time to take them and the children didn't have the codes to get the books out.

Although design can improve many aspects of school life, without the relevant staff in place, spaces can be less than optimal.

To conclude, design for reading in the primary classroom is generally understood by school leaders to be the sole responsibility of the class teacher, although they may delegate this task to a classroom assistant. This sense that the class teacher is responsible seems to apply even when the teacher evidently does not have a budget with which to buy new furniture. The discrepancy in the quality of design between library rooms and classrooms could be attributed to the fact that class teachers do not regard the arrangement of their classroom as design for reading, whereas when a library space in a school is refurbished, there is an expectation that attractive furniture and display shelves will be provided. It may also be due to the perception of a whole-school library space as a high-status area through which the school may be judged by inspectors or visitors.

4.2.2.3 Beyond the classroom: non-teaching spaces

As shown in Figure 4.6, the types of non-teaching spaces identified by participants in the study as spaces where they had read were as follows: corridors; halls and dining rooms; converted cloakrooms; and especially designed or off-the-shelf reading pods. Children were also observed reading to a classroom assistant in the staff room in School O, but none of the participants included in the study reported reading there themselves. Except for the staff room, each of the above types of non-teaching space will be discussed below. The identification of these types of space where Year One readers read is the first step in the process of considering how to improve design for beginner readers in schools. The intention of this aspect of the study, in compiling a taxonomy of spaces, was not to measure the number of children who read in non-teaching spaces nor the frequency with which they read there but to ascertain whether reading in these spaces was considered a routine practice and to discover whether any children from participating classes were withdrawn from the classroom to these non-teaching spaces to read.

At least one child participant in six of the seven schools reported reading in at least one of the types of non-teaching space in Figure 4.6. School O, an ex-secondary school and the largest of the school buildings in the study, was the exception because all of the locations to which children were withdrawn were converted classrooms, of which there were many. Although readers in Year One of School O were regularly withdrawn from the classroom for extra tuition in reading, they were taken to these teaching spaces rather than corridors or halls. Cloakrooms (non-teaching spaces) converted into small-group rooms, storerooms and offices were also a feature of School O but none of the children participating in the study reported reading in these rooms.

The finding that some children learn to read in spaces that do not meet the required standards of design is significant because it suggests that there is a gap in knowledge and/or communication between the experts who create and regulate the standards for the spaces and the inhabitants of the school community who use the spaces. One interpretation of this finding is that teaching staff view all available spaces beyond the classroom, including non-teaching spaces as suitable for beginner readers because they are not aware that such spaces may not be fit for purpose. Another explanation is that even when teaching staff recognize that a space may be unsuitable for teaching, they may have no other choice but to use it as nowhere more suitable is available to them. This may be because there are many other demands upon their time, making it impossible to reschedule lessons when there is no space available, and because there is a high demand for available teaching spaces beyond the classroom.

Corridors

In Building Bulletin 103, corridors are not included in the net area of the school: the net area comprising the total of all "usable spaces, both teaching and non-teaching" (DfE/EFA, 2014, p. 7). By this definition, corridors are grouped together with "toilets and showers, boiler and plant rooms, school kitchens, and the area occupied by internal walls" (ibid.) and yet, in five of the seven schools visited in this study, corridors were constantly in use as teaching spaces for individuals and small groups of children.

School H, which had been refurbished two years before my visit, had a single wide corridor on each of the two storeys of the building that ran from one end of the school to the other. Bookshelves, small desks and chairs were arranged here for individual or group reading and writing. Two of the classrooms in this two-form entry school were too small to accommodate 30 children working at grouped tables inside the classroom and so one group of children from each of these two classes worked at a table just outside the open classroom door, with a teacher or teaching assistant supervising them. The Literacy Co-ordinator commented that on her first visit to the school, she had been impressed by how "these children, who were rotated groups from Year One, would take their books out there and often work without any support, the teacher just popping her head out occasionally." She added that because "every older child in the school had already experienced this way of working in Year One, as they walked past they were respectful." However, she did acknowledge that this could be harder at certain times of the day:

> It's very difficult if some children are going to lunch and others are working and we certainly have a very open plan system so if you're upstairs doing guided reading and downstairs they're going to lunch then it can be quite loud.

Teachers across all schools reported that they sometimes found it difficult to find a secluded, quiet space within the school in which to complete reading assessments but that they would prefer not to remain inside their own classroom to do assessments while another teacher was teaching their class. In School T, the class teacher commented that although a new purpose-built "nest" (a single-storey building with four small rooms that had been built for small-group work and counselling sessions in the school grounds) was a valuable addition to the school, more such spaces were required because, "there are always times when you need to have a smaller group or you need to do something one to one or an assessment would be better but there are people walking down the corridor." She felt that the lack of availability of "quieter, separate" spaces impinged on her ability to do her job effectively and had an impact on the children's learning. I asked her what was particularly problematic about carrying out reading assessment activities in the corridor areas:

Well, the child's concentration, for one, and then you get better results from them and, I don't know, just your own concentration. If you keep breaking your own flow when you're trying to get them to do something, then that has an effect on them.

In School S, teaching spaces had been created in the corridors, which were wide and well-lit with high ceilings, and during the morning literacy lesson, I observed small groups of children and individual children reading with teachers at small tables and chairs placed in the corridor or seated on the floor together.

Figure 4.20: School S corridor

One of the architects who worked for the design team at SCABAL, Ruth Taylor, whom I interviewed after my fieldwork in schools, told me about a small, side-project that she had proposed to the head teacher of a school that was being refurbished to maximize the use of space beyond the classrooms:

Little, individual spaces were important right at the beginning of my architectural career in schools because the first school I worked with wanted to create various

small spaces for withdrawal that weren't part of the classroom (...) it was about making something different out of partially wasted space. My pitch for that job was about making spaces in corridors with little pull-down seats and at that point I had no idea of the group room function in schools and no knowledge of primary schools. After five minutes of talking to the head teacher I realized I needed to rethink but (...) those in-between spaces are important.

This architect recognized the architectural imperative to use wasted space to good effect in this instance but also realized that whilst this intervention might look useful and add value, readers would be essentially trying to read in a corridor rather than having the affordances of a group room with a table, chair and a door that can be closed against noise and interruption.

Pods

Two schools had invested in fixed reading pods and these were installed in open areas: a transparent dome in School S, see 4.2.3.6; and a bespoke wooden pod in School Q, see 4.2.3.5. Both structures were fixed in place and would have been difficult to move. A fabric-covered, improvised structure that could have been described as a pod was observed in School H. It was being used as a calm-down space within a counselling room and, like the other two pods, was a space within a space into which reading books could be taken.

Figure 4.21: Pod in School Q

Cloakrooms converted into small-group rooms

An unexpected finding of the study was that in three of the four schools built before the 1920s (P, O and F), rooms that had been originally designed as cloakrooms were functioning as small-group rooms with the intention of supporting reading.

These repurposed rooms might only incidentally meet teaching area standards, however, the addition of a door that could be closed created a quieter space for reading and in the walls on either side of the new room were thick rather than partitioned. In Schools P and O, windows that could be opened provided ventilation and light.

Figure 4.22: Inside a converted cloakroom, School P

Unlike the converted cloakrooms in O and P, those observed in F had no windows and were illuminated by fluorescent strip-lighting on the ceiling. Ventilation was through the door, when propped open.

Dining halls and gyms

The acoustics of large dining halls are particularly unsuitable for the teaching of phonics, since reverberation time makes it difficult to distinguish between phonemes. In School P, a small group of children was observed having supplementary phonics tuition in a corner of the main hall behind a small screen during the first lesson of the day. The screen provided adequate visual separation from the rest of the hall but is unlikely to have contributed to any acoustic separation. Even though this is a less than optimal location for teaching phonics to young children, the instinct to screen the area from interruptions and disturbances is a good one. Unfortunately, I was not able to discover who had created this visually protected area, but their decision to use a screen to create a backstage rather than frontstage area (Anderson, 2009; Goffman, 1956), see 2.1.6, demonstrated an awareness by teaching staff that children may find it difficult to learn when they are on show.

Figure 4.23: Screened-off reading area in the dining hall of School P

4.2.3 Locating readers in the school building

When designing this study, it became apparent that research outcomes emerging from Question D, "Do all beginner readers in Year One read in the same spaces in their school?", should be addressed within the context of each school building rather than as a general response to all seven schools. Who reads where is only relevant in the context of the particular school building in which they read. Quantification of these research outcomes would be meaningless since the question of who reads where depends upon multiple variables of spaces (and staff) available in each school and these factors are, in turn, affected by the shape, dimensions, standard of repair and age of the school building. In addressing the question of where children read within the school building, it would pointless to declare that, for example, a certain percentage of readers in the study read in a small-group room or in a corridor without the context of the individual school in which that activity took place. Neither would this information indicate whether the rooms provided beyond the classroom were available or suitable for reading. While the delivery of the reading curriculum and the organization of reading groups by ability was similar in each of the schools, the individual design of each school building meant that there was no single,

standard practice for withdrawal of readers from the classroom to a specific type of space. Hence, the findings below are intended to represent where beginner readers read in seven schools within the context of each school.

The contextual information provided for each of the schools recognizes the significance of the relationship between where readers read and levels of staffing for each classroom. The teacher rarely leaves the classroom during the timetabled day and if they do, they are generally replaced by a substitute teacher. Classroom assistants, by contrast, often withdraw children from the classroom for additional tuition and, thus, the potential for children to read beyond the classroom has a direct correlation to the availability of classroom and special needs assistants. This, in turn, depends on the availability of funding for these posts.

Three of the schools in the study (H, O and S) were in London boroughs that funded specialist Reading Recovery teachers at the time of the study. These teachers work with at least a dozen Year One children during the school year, whom they withdraw from the classroom to a separate reading area. Some of these children were participants in the study.

N.B. The findings below are reported in chronological order of the school visits, which all took place during the summer term of 2015. Each school profile has three components: firstly, the context of the school; secondly, a breakdown of who reads where in the building; and thirdly, a section about design observations that comprises responses to particular aspects of design for reading in the school and reflections upon how a reading nook could contribute to the school.

4.2.3.1 School P

The context

Built in 1887 and situated on a busy road in an area of high deprivation in London, School P was described as a "one and a half form entry school" on its school website. In Year One there were two classes, each with their own classroom. The percentage of children for whom English was an additional language was 68 per cent at the time of the study and 35 per cent of children attending the school were eligible for free school meals: more than double the national average.

The Literacy Co-ordinator reported that "parents struggle with reading" and that the provision of "good quality books" in school to be sent home was a high priority. She reflected that the design of book corners in classrooms "isn't something that we are proud of, there needs to be a bit more emphasis on that." In the past ten years, there had been a substantial financial investment in reading spaces for the school, primarily a library in a converted assembly hall and a new building in the playground designed to support readers in key stage 2. The library was furnished in a contemporary style and resembled a well-appointed public library. In one corner was an informally laid-out Information and Communication Technology (ICT) area, large enough for a class to gather. The library was maintained and staffed by volunteers, who also supported readers in choosing books and reading for pleasure.

The participating Year One classroom was on the second floor of the three-storey school and its large carpet area and high ceilings gave it a feeling of spaciousness, even with a book corner, a role-play area and a screened workspace with table and chair for one child and her special needs assistant. Even on a bright, summer's day, however, the room was dark.

The book corner could comfortably accommodate four children at once and was bordered by walls and a bookshelf on three sides. It was located underneath one of high windows that ran along the far wall of the classroom and was brighter than other areas of the

classroom, although the light was harsh rather than gentle in the middle of a summer's day. The furniture for the display of books was not well-suited to their various dimensions and they were piled up on top of each other. However, the seclusion offered by the placement of a bookshelf near to the corner of the room meant that the space was almost hidden from view and when sitting inside, it felt as if it were a very different type of space from the rest of the classroom

Children participating in the study were not universally enthusiastic about the book corner in their classroom. One of the emergent readers, who told me, "I don't like reading, reading is boring," reported that they liked to be in the book corner because they could lie down but one of the fluent readers told me that the book corner was "for babies". One of the two proficient readers, characterized by the teacher as being in the "middle group" told me that he had been to the book corner but "I don't read there, I just look."

One child in the class had a statement of special educational needs which meant that a special needs assistant was generally present in the classroom. A teaching assistant was also allocated to the class and she spent a substantial proportion of her time reading with children in the school library or changing their reading books that were sent home daily. Reading volunteers also worked with children from Year One in the school library. The converted cloakroom on the same floor was known as "The Reading Zone" and was used by a specialist reading teacher to give extra tuition in reading and writing. This converted cloakroom was a space that was well-lit by natural light and had a door that could be closed for acoustic protection.

Who read where?

All of the participant children were withdrawn from the classroom to read, whether they were fluent, proficient or emergent readers. All six participants had visited and spent time reading in the library, a converted assembly hall, with their classroom assistant or with

reading volunteers. The two emergent readers had also both read in the Reading Zone, the cloakroom conversion. Reading volunteers read regularly with proficient and fluent readers.

Inside the classroom, each of the participants read at one of six, grouped tables and on the carpet. Every child reported that they had read in the book corner but only the child with autism was observed reading in the book corner during my visit. None of the participants mentioned reading in the role-play area or in the special, screened-off space at the back of the classroom where one child sat at a table and chair with the special needs assistant: this was *her* space.

Design observations

There was a discrepancy between the investment in the school library and the book corner in the classroom, in which books were poorly displayed and stored. Strategies for reading design in shared spaces had not yet filtered down to individual classrooms.

Aside from the Reading Zone, high ceilings and reverberant surfaces meant that acoustic design was not ideal for the teaching of reading, even in the well-appointed library. The classroom book corner, although tired-looking, attempted to provide some seclusion for pupils. The teacher reported frustration with the noise levels in the classroom, particularly during guided reading lessons and was also perplexed by children being withdrawn by classroom assistants (under her instruction) to places in the school that she described as "who knows where?" Not knowing where children had been taken to mean that she sometimes needed to delay the start of a timetabled lesson until the children were returned to class.

A nook could offer this classroom a semi-secluded reading space where readers could share or enjoy books together. This is an example of a classroom that might also benefit from a nook that afforded the possibility of an alternative teaching space so that children would not have to be withdrawn for reading tuition to the reverberant, sometimes noisy library.

LED lights could be installed inside the nook in this dark classroom to ensure that light levels would be sufficient inside. The shelves of the nook could also provide much-needed display space for picture books. The nook could also offer a more secluded, less stimulating space for the child with special needs, enabling them to stay in the classroom rather than being withdrawn. Additionally, the child who felt that the book corner was "for babies" might enjoy the more sophisticated design of the nook, while emergent readers who might enjoy lying down to peruse the illustrations of books could do so in semi-seclusion without interruption. A group of children could also use the nook during guided reading sessions.

4.2.3.2 School F

The context

School F, like School P, was built in 1887 and is sited on a quiet street opposite a tennis club. In addition to the playground, the school also has access to large, grassy playing-fields and an allotment. F was the only school in the study beyond the Greater London area. It is located in a town in the county of Hampshire, approximately 80 km west of London. The class teacher reported that because of the school's excellent record in providing for the needs of children who had newly arrived in the UK, the intake of children with English as a foreign language was relatively high amongst local schools at 31 per cent. Only 7 per cent of children were eligible for free school meals in 2015 when the research took place. This was less than half of the national average.

This had been my own junior school during the 1970s and I had spent what is now described as Year 4 in the classroom that was participating in the study. Since the '70s, the school had been converted from a three-form entry junior to a two-form entry primary school and an extension of reception and nursery classrooms had been added to the original building. Although the classroom was far more highly decorated than I remembered and a white board had been installed, the fabric of the classroom had changed very little. The class teacher had also, coincidentally, been a pupil at the school (in the 1960s) and had also spent

a year in the same classroom. Other changes to the school included the conversion of the upstairs assembly hall into a library and computer suite and of cloakrooms into storage and small-group rooms.

The most notable feature of design for reading in the participating classroom was the presence of two semi-secluded areas for reading and teaching of reading. These had been designed and installed by the exceptionally talented classroom assistant and took the form of a *Percy the Park Keeper* role-play area and the *polar explorers'* book corner. The themes of these areas changed each term, depending on the topics that children were learning about. The existing structures were freestanding, made from balsa-wood frames and covered in a variety of fabrics and materials. The teaching staff were proud of these two areas and told me that the children had spontaneously taken off their shoes when first entering the area so that they wouldn't spoil the white material that lined the floor "without us asking them to" [teacher]. This was corroborated by the participants in the study and I also observed children respectfully taking off their shoes to enter the area. The atmosphere in the classroom was exceptionally calm and children read quietly and independently throughout the day when they had finished their work, sometimes in these areas.

Who read where?

All children read inside the classroom and the provision of two nook-type structures meant that children were rarely withdrawn for extra tuition. None of the children in the class had a statement of special educational needs and there was no special needs assistant. The classroom assistant worked every weekday morning, offering support to the teacher with resources for the classroom and extra tuition for children, either at one of their six, grouped tables or inside the hut where she had arranged a table and chair for reading, writing and maths activities. This gave the classroom a sense of inclusivity.

Inside the classroom, all children had read in the book corner, on the carpet and at their tables. One of the proficient readers talked about how she felt about reading in the book corner:

> It's really nice in there and you can go three at a time in there. We read a book each. I read in my head not out loud. When I was on a really hard word I just said it out loud.

Two of the proficient readers and one of the emergent readers had also read in the role-play area with the classroom assistant at the table. The fluent readers had not read in the role-play area.

None of the children reported reading in any other place beyond the classroom except for the school library, which was an unwelcoming space with little accommodation for seating and an emphasis on the storage rather than display of books. None of the children in this Year One class had read in one of the converted cloakrooms.

Design observations

Of all the schools involved in the study, teacher design for reading was at its most variable between the participating Year One class and its neighbour: while the participating class had access to two beautifully designed reading nooks that meant that readers did not need to be withdrawn from the classroom for additional tuition, the neighbouring classroom had no such arrangements and books were collected haphazardly in a selection of low storage boxes. This is not to denigrate the neighbouring classroom teacher, who would benefit from support with design training and resources but demonstrates a lack of joined-up thinking about design for reading in a school by the SLT. A reading nook could offer both classes the opportunity to have a secluded space for reading, reducing the disparity between the two.

There was also a marked difference between the cunningly-designed reading areas in the participant classroom and the poorly designed whole-school library, which appeared to

offer little space for sitting to read and had inadequate shelving and little display. Like School P, this area was a former assembly hall, shared with facilities for ICT and the reverberant surfaces meant that it could be noisy when a class was working in the ICT area. Reading nooks could be beneficial in this library area as a space where children could share books or read quietly alone.

Children responded to the two free-standing nook-like structures in the participating classroom so positively that it encouraged me to consider how to make the nook as appealing as possible to readers without necessarily introducing a narrative element into the design.

4.2.3.3 School O

The context

Located in a quiet, narrow, one-way street off a major route through the East End of London, School O was originally built for 1,200 children in 1896. The school had once been a secondary school but since 1986 had been operating as a primary school. State funded primary schools in England in 2015 had an average of 19.4 per cent of children with English having a "first language known or believed to be other than English." When the research took place in 2015, this accounted for 97 per cent of pupils in School O. Eligibility for free school meals was also high, at 56 per cent. The school employed specialist support teachers for reading and writing and for maths in addition to full-time teaching assistants allocated to each class. As a two-form entry school in an ex-secondary school building, there were many additional classrooms that were not required for whole-class teaching and these had a variety of uses as offices, reading rooms and a Reading Recovery teacher centre.

The Year One classroom was the largest in the study and, unlike the Year One classrooms in Schools F and P, was of an irregular shape with a non-secluded reading area and book corner at the back of the classroom that accounted for approximately one quarter of the whole. There was no role-play area in the classroom.

The class teacher was in her Newly Qualified Teacher (NQT) year, prior to receiving Qualified Teacher Status (QTS). She was supported by a classroom assistant and a special needs assistant for one child with autism, who shared a table with her close to the edge of the carpet area. This area was not screened from the rest of the classroom, unlike the area in School P.

Who read where?

Emergent readers in this school read in more locations than fluent or proficient readers. All children participating in the study read on the carpet and at their tables. All of the participants had read also in the book corner at the back of the classroom but only the emergent readers used the desk and table set up at the back of the classroom where they read with the classroom assistant.

It emerged at this stage of the study that children did not understand phonics as reading. Phonics lessons took place in the classroom and in at least one of the redundant classrooms in the school. The two emergent readers had read in several locations beyond the classroom, including the Reading Recovery room, a converted cloakroom and the staffroom while the other participants had only read in the classroom and in another classroom for phonics lessons.

In this school, with a high availability of additional, though not purpose-built rooms where reading was taught, emergent readers experienced several different locations for tuition. The high proportion of pupils with EAL is likely to have contributed to the provision of specialist teaching staff in the school, also resulting in children being withdrawn from the classroom for additional lessons to their teaching rooms.

Design observations

The book corner in this classroom was open to the rest of the class and despite its size, storage and display was poor. It was also used as a place where children's artworks were left to dry. Although there were many available spaces for the withdrawal of children for additional tuition, teaching staff and specialist teachers felt that even these were not sufficient to meet the high demand. A reading nook could be beneficial to this classroom in offering a secluded, separated space for reading and as calm, quiet area.

The children in this classroom were demonstrably respectful of the small table and chair set out for the child with autism and explained to me by the children that this was his special place in the classroom.

This respect for designated spaces, like that shown by children in School F towards their *polar explorers'* book corner, encouraged me to be more confident in what may have seemed an adventurous choice of material for the prototype nook: plain, brown cardboard.

4.2.3.4 School T

The context

T was the only non-primary school in the study, being an infant and nursery school. The proportion of children with EAL was just under 60 per cent while 14 per cent of children were eligible for free school meals. The school was located in the centre of a housing estate in the far west of London under the flightpath of an international airport.

School T is a single-storey building with low ceilings and narrow corridors. The interior of the participating classroom was light and bright due to floor-to-ceiling fenestration. The essential fabric of the building had remained the same since its erection in 1950 but a new library room was added to the building as an extension and a discrete new block where

children could be offered additional support in reading, writing and maths. Known as "the nest", counselling and meetings also took place in this space. This school had been the location of my second teaching practice as a graduate trainee, twelve years previously, when the current head teacher, who had been responsible for pushing forward with the refurbishments, had been a class teacher in Year Two. During the study, she was absent from the school on long-term sick leave.

One classroom assistant was available to support the class teacher in the mornings and there was no special needs assistant, although at the time of the study, one of the children in the class was expected to receive a statement of SEN soon after my visit.

The new school library, which replaced a dark library-corridor, provided robust and attractive shelving for the storage and display of books at an accessible height for the children. Children taking part in the study were particularly enthusiastic in their response to the new furniture that had been bought for the library.

Although there was no role-play area in the participating classroom, the book corner was spacious enough to accommodate at least six children at a time and was situated at the back of the room. Floor-to-ceiling windows and a skylight in the ceiling meant that the classroom was well-lit by natural light.

The classroom book corner, in contrast with the library, was a poorly furnished area with inadequate storage and seating. Fitted low wooden work surfaces for the computers with plugs and cabling visible, divided the space from the rest of the classroom. The computer stations were rarely used and cumbersome and the area had no seclusion. This was considered to be a positive aspect of the space for the teacher, who was newly qualified and averse to having any "hidden corners" in the classroom. She was unhappy with the design of the book corner but unsure about how to improve it or how to find better furniture in which to store and display books and mentioned that this would be a very low priority for the SLT.

Who read where?

All participants read in the book corner, at their tables and on the carpet inside the classroom. Emergent readers were withdrawn from the classroom to a long, narrow corridor close to the staff room.

All of the children had read in the new library but only one of the participants, an emergent reader, had read in "the nest". The teacher also reported that she sometimes was forced to do reading assessments at a table in the corridor but that this was far from ideal due to interruptions and distractions for her and for the child.

Design observations

Children in this class were markedly enthusiastic about the library space and its reading furniture, in contrast with their own classroom book corner. The provision of a comfortable space where one can read for pleasure became more of a priority for the nook design after this school visit because these children were so eager to read and yet the reading area that they had easiest access to (in their classroom) was unattractive and difficult for the teacher to alter.

In the context of this school, the nook could offer an alternative to the existing book classroom corner and computer area if the cabling and built-in tables for computers could be removed. This is another example of a school where there are insufficient, suitable and available spaces for reading tuition for those who are withdrawn from the classroom.

School T is close to an airport. Aircraft noise is noticeable inside the school and extremely loud in the playground. Outdoor reading nooks might offer acoustic protection from noise in the playground.

4.2.3.5 School Q

The context

School Q was built in 1913. Its location in an affluent area of West London was reflected in the eligibility for only 3 per cent of pupils to free school meals. 17 per cent of children had English as an additional language. Q was an infant school with three and four form entry until 2013 when it became a two-form primary. The Year One classrooms had insufficient space for a book corner or role-play area in the main body of the classroom, although an annex to the classroom doubled as a withdrawal space and book corner. Year One classrooms could be accessed via the playground or through an open-plan area in the main part of the school which contained two bespoke designs for reading created by the same high-quality furniture designer: a reading pod and an area with carrels. The pod was a striking, recreational reading space where children could lounge on brightly coloured cushions or settle with a book.

Figure 4.24: Reading pod

This area was used by parent-reading volunteers and by classroom assistants to read with children. The two emergent readers and one of the fluent readers reported that they had read in this space, the latter "for a treat". The class teacher complained that since her

classroom door did not shut properly, she could sometimes hear people reading or talking loudly from this area. She also regretted the fact that that the pod could not be supervised from her classroom and felt that it was too risky to leave unsupervised children from Year One alone inside, which she gave as a reason for rarely using the space.

Who read where?

All of the readers were withdrawn to locations beyond the classroom to read with adults, either by reading volunteers, who were generally parents of children in Year One, or by classroom assistants. These included a newly refurbished library; an open plan area adjacent to the classroom and other classrooms for streamed phonics lessons. The Parent-Teacher Association had contributed funding towards the reading pod and open-plan area with carrels. One of the participants in the study, who has a statement of special educational needs, enjoyed reading with his assistant in the reading pod but other children had less access to it because supervision was needed and so this space was not used as frequently as it might have been. Emergent readers were more likely to receive extra tuition in the school library, the open-plan area or in the classroom annex, which had its own door.

Design observations

Unlike the beautifully-finished reading pod in Q, the location of the nook can be changed according to need. The reading pod was an expensive, well-made piece of furniture that was attractive to children but impractical because it was poorly located in relation to the classrooms. This observation influenced the nook design with respect to its ability to be light-weight and easily located in different areas of the classroom or school as required.

Other design problems associated with reading included excellent storage in the open-plan area for books but not enough pegs for a class of thirty children, resulting in book bags and

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PE kits being distributed around the area rather than tucked away in their intended spaces, making it very untidy.

4.2.3.6 School S

The context

School S was the most recently constructed of all the school buildings researched, having moved from a nearby site in 2012. The three-form entry school is located in an outer London borough. 43 per cent of pupils were eligible for free school mealsf and 90 per cent of pupils did not speak English as a first language. On the school website, the school was described as having "spacious classrooms" but the participating classroom was the second smallest in the study and with 31 children on role felt crowded with little room to move. There were no pegs available for children's coats in the classroom or corridors so children hung coats and bags on the back of their chairs, making the classroom feel even more restricted. Space was at a premium throughout the school and the Assistant Head, who took me on a tour, told me that the Year Six teachers had taken over a technical area as a small-group room that was never intended for that purpose.

Who read where?

In School S, emergent readers were regularly withdrawn for Reading Recovery lessons in a small, purpose-built small-group room located near to the entrance of the school, at some distance from the Year One classroom. This was one of four small-group rooms in this location that had been built to accommodate readers from several classes. Children from Year One were also taken to read in the wide corridor adjacent to their classroom and, during the visit, several individual children were being given separate tuition in reading in this space. There were no secluded areas in the corridor and children sat at small desks or on the floor to learn. Other participant readers were only infrequently withdrawn for

reading. One child in the participating class had a statement of special needs and his own small table at the edge of the carpet which was open to the class and not partitioned.

Design observations

An off-the-peg, transparent dome made from glass or Perspex dominated the open-plan area at the top of a staircase. This was used as an additional small-group room and was large enough to seat at least one adult and three children. None of the children in the study had read in this area but it was very much on show to passers-by, although sufficiently soundproof for there to be no audible sound from inside. The dome reminded me of a goldfish bowl and gave me pause for thought about the value of having a transparent reading nook -- the original design -- even when sightlines would be disrupted by bookshelves. It was not apparent how this dome was ventilated and unfortunately, I was not able to go inside or examine it closely as it was in use throughout my visit.

The classroom was small and the original design of the nook would have been too large to fit in the room and difficult to ventilate in that space. The nook prototype was designed to be small enough to function as a replacement book corner in the smallest classrooms in the study.

4.2.3.7 School H

The context

School H was originally constructed in the early 1950s but underwent further refurbishments in 2013 so that the school could be expanded from a one to a two form primary. It is situated in a quiet road in a residential suburb on the outskirts of London. 56 per cent of children in the school had English as an additional language but only 11 per cent were eligible for free school meals at the time of the study.

The original classrooms were not uniform in size, with some being so small that only 25 children could be accommodated at any one time at tables. This resulted in an extra table being placed outside the classroom door, where alternating groups of six children could work with a classroom assistant in the early years or independently in the upper school. Reading and books were highly prized by staff and this was reflected in a range of highly decorated book corners but not in other areas of design for reading, with books scattered across a range of second-hand book cases along the wide corridor that stretched from one end of the main building to the other.

Who read where?

Emergent readers and children with special educational needs were withdrawn to read in the long, spacious corridors at small tables outside their classroom. No secluded areas were provided. Additionally, some of the participants read in a small, windowless room with strip lighting that had been created by the redesign of the classrooms. Children were expected to talk quietly, if at all, when moving around the school so as not to interrupt their peers who were working in the corridors at grouped tables or small individual workspaces. Proficient and developing readers had not been withdrawn to read in spaces beyond the classroom, although all children sometimes worked at the group table outside the classroom.

Design observations

School H, newly refurbished at the time of my visit, exemplified the low priority for carefully thought-out reading spaces that was apparent across the study and it appeared that an opportunity had been lost with the redesign to rethink the spaces in which readers could read. Instead, expansive corridors and small-airless rooms were being used for reading and the Deputy Head, who was also the Literacy Co-ordinator, was looking to raise funds to retrofit the school with suitable reading spaces. An examination of the book corners across the school demonstrated that several of the teachers had a keen eye for design but they

were often working hard to maximize reading against constraints, such as very small classrooms and wide, reverberant corridor spaces. The nook could provide an alternative to exposed desks in corridors but even in the final prototype would only just be small enough to fit into the tiniest classrooms in the school in place of the reading corner.

4.2.4 Using the findings to take the design forward

It is common practice to withdraw children from the classroom for extra tuition in reading, either in small groups or individually. Emergent readers are more likely to be withdrawn from the classroom to read with an adult than proficient and fluent readers although this is not exclusively the case in every school.

If emergent readers are experiencing hearing difficulties or have SEN or EAL, they may be disadvantaged when these spaces are poorly designed, especially in terms of their acoustic provision.

The types of spaces in which children read beyond the classroom are often unsuitable for beginner readers because they are noisy, crowded or uncomfortable. Although special provision may have been made for a secluded area for reading, this is not always successful. The reading pod in School Q, for example, was located in the corridor outside the classroom and was infrequently used because the teacher was unable to watch and supervise children reading or playing independently inside the pod and she felt that it was too much of a risk to let them do this without adult supervision.

Teaching staff report that there are not enough available spaces for reading beyond the classroom. Sometimes teachers commission or buy large pieces of furniture, such as the reading pod (Q) or transparent dome (S), but more advice from experts might be helpful in locating these to the benefit of all end-users (teachers and pupils).

The findings demonstrate that there is a demand for acoustically-secluded spaces for the withdrawal of readers for extra reading tuition in schools. However, in considering how to take the design of the nook forward, a question arose about whether the nook should be designed to be used inside or beyond the classroom or both. Having made the decision that the nook should be sufficiently compact to fit in each of the classrooms in the study, the emphasis moved to design for a piece of furniture that could be used as a book corner, role-play area or calm-down space inside the classroom. The prototype nook was intended to be a robust, safe space that would be comfortable, safe and attractive to children.

All of the teachers interviewed clearly expressed the opinion that a book corner was an essential component of the Year One classroom. However, many of them revealed that they felt unconfident or under-resourced in terms of time, materials and money to design an adequate book corner that they felt proud of in their classroom. The findings also suggest that teachers are given insufficient support and resources (including financial) to design well for reading in their classrooms and that there is little coherent design except for reading across the whole school. The nook provides the teacher with a ready-made book corner and role-play area with good display.

Teachers felt that it was vital for young children to have access to a wide-range of high quality books and to have the opportunity to choose and explore these books for themselves. A lack of adequate display was also observed in several schools and the nook addresses this absence. Teaching staff or children can easily reach and change the books that have been placed on the exterior walls of the nook. Special books read by the teacher and enjoyed by the class can also be placed in a prominent position on the nook so that everyone in the class can read them.

A precept of the study was that children in every school should have access to the same quality of provision and consequently when designing the nook, I rejected any features of the design that could not be realized in each of the classrooms that I visited.

4.2.5 Pupil participants and their perspectives

Each of the children who volunteered as tour guides to the spaces in their schools where they read were enthusiastic about leading a tour and particularly excited about using an i-pad to generate images. However, while some children engaged in and even directed a continuous stream of conversation, others were comparatively non-verbal in their approach as guides. I made brief written notes at each stopping point on the tour to describe the child's physical and emotional response to a space or to note down their verbal responses verbatim. These notes comprised a relatively small data set, with a maximum of five comments about reading and reading spaces generated by each child to complement the images generated by them. These data were compiled within the profile of each of the seven schools and analysed through critical discussion with the architect within the framework of the design methodology.

4.2.5.1 Children's perspectives of themselves as readers

Children who were perceived by their teachers to be 'higher ability' readers all confidently engaged in discussion about their own reading preferences relating to the types of books that they enjoyed. These children self-identified as readers of chapter books and, in several cases, offered an unsolicited evaluation of their status as readers in the class based on the name of the group/table that they were streamed by for reading and the type, content and titles of books that they were able read.

Child F: I read on my own sometimes (in class) but every Friday I read with a teacher. And then we read chapter books but that's really hard. At home I practise reading a chapter book and at the moment I'm reading a 25 chapter book.

Child P: I'd like to read more chapters … more chapter books.

Child C: I am the only one in this class who reads chapter books!

During a tour, one child told me about her progress from the middle to the top group:

Child O: When I came into this class, first of all I found out that I was in red group on Friday and I didn't know what … I was in purple group before and the teacher told me Friday. And when we did it, everybody else was quite good. Everybody else in the group was always in their group and (long pause)

Researcher: How did you feel about going into red group?

Child O: I was quite shy and everybody was finished when I was only half way through. And then when we did it on another day, on Tuesday, I was in the book corner and I read a book and everybody else was reading it really carefully but I only got to the first page and er ... I was ... but then I was really good because I practised a lot.

By contrast, none of the readers perceived to be of 'lower ability' by their teachers offered any commentary about their position within the class, their table grouping or the types of books that they enjoyed reading. Two of the lower ability readers explicitly described reading as "boring" and none of them engaged me in a discussion about books they enjoyed during the tour. This apparent difference between the (perceived) 'top' and 'bottom' readers is one that could be teased out in a further, carefully designed research study about children's own perceptions of themselves as readers and of their status as readers within their class. The confidence of 'top group' readers in sharing their pride at progressing onto chapter books was consistent throughout the study, as was the 'lower group' readers' reluctance to talk about how they viewed themselves as readers. This latter group of readers may be as aware of their status within the class as their peers, however, if this is the case, they were less eager to share their insights about their reading status with an unfamiliar adult.

Readers in the top groups in each class were proud to be seen to be reading 'chapter' books wherever they read in school. Several of these fluent readers also offered (unprompted) examples of comfortable spaces where they enjoyed reading at home.

Child Q: I like reading in my bunk bed.

Child Y: I like reading on my sofa.

They also selected their favourite spot to read in school.

Child Q: I like to sit on the blue mushroom (in the playground) and read.

Child F: I read in the outside classroom when it's nearly home time but not quite."

Their comments suggested that they enjoyed reading at home and in school and perhaps had already habituated the reading process enough to cocoon themselves from interruptions and distractions in either location. Conversely, none of the readers who were designated as being of 'lower ability' suggested that they enjoyed being seen to be reading. In response to this data generated by child participants and in discussion with the architect, the feature of high visibility of the original nook design, with its Perspex windows and door, was modified to give more seclusion and privacy to emergent readers.

4.2.5.2 Children's perceptions of reading spaces in school

Children placed at the lower reading tables by their teacher in six of the seven schools were generally unenthusiastic about the spaces where they read in their classroom and their responses ranged from a perfunctory comment of "I read here" and "I read there" to children directing me to a particular space and pointing at it. The exception to the lack of enthusiasm for reading spaces in schools by lower ability readers was in School F's *polar explorers'* book corner and this observation is discussed below.

Two of the children from the 'lower ability' set in two different schools (not School F) indicated that they preferred to lie down in the book corner rather than sit up while looking at a book. This may have been because they wanted to get comfortable with a picture book, which are generally larger and more unwieldy than smaller chapter books, or could also be because they preferred to be less noticeable to others when reading. This preference for lying down by lower ability readers was also discussed with the architect when modifying the original nook's feature of high visibility.
The most enthusiastic responses by lower ability readers to reading spaces was to school library spaces that had been refurbished with bright, attractively coloured furniture, which invited play as well as supporting reading. Children engaged physically and emotionally with these spaces, particularly those which featured a stack of brightly-coloured cushions, reminiscent of 'party rings',

iced biscuits with a hole in the middle, and a set of green plastic dogs that could be sat upon by these five and six year old children.

Child CCC: This is fun! (climbs on the plastic dog).

Children interacted with this furniture, stroking, sitting on it and jumping around it with excitement and pleasure. None of the classroom furniture or settings elicited a similar response.

None of the children who led me on tours of the school in any school made any negative comments about reading spaces that I (silently) assessed as poorly-furnished or neglected, unlike their teachers who were quick to comment upon the shortcomings of readings spaces that they had designed. As no child in the study suggested that any of the spaces could be improved, I did not prompt them to suggest ways in which they might be made more comfortable or ask them leading questions about the qualities of spaces. Children demonstrated a lack of interest in these areas non-verbally, not engaging with books, soft furnishings and toys when indicating these spaces to me as part of the tour.

One child in School Q made a comment about the requirement for adult supervision when using the reading pod that was located outside her classroom in the corridor and I interpreted the content and tone as reflecting the teacher's voice and concerns.

Child Q: We go to the pod for a treat. We can read with a friend. Someone's outside in case someone has an accident, if they jump through the window and falls.

Children sometimes associated the reading spaces they indicated on a tour with a named adult.

Child CCC: I come here to read with Yvonne.

In this case, the reading space was a converted cloakroom used by a specialist teacher for supplementary tuition in reading and writing and I noted at the time that the child appeared to interpret this space as belonging to the teacher in question.

In school F, all of the children participating in the tours and in the class as a whole showed an unusual degree of respect towards the book corner, which was furnished in white satin and net. I

observed children carefully removing their shoes when entering the *polar explorers'* book corner to avoid getting the white material inside dirty. The teacher confirmed that children had all removed their shoes spontaneously the first time they encountered the new design without being asked to by a member of staff and had continued to do so ever since. Children also commented upon the way that the reading corner was used, for example.

Child O: It's really nice there

Researcher: Do you go in on own?

Child O: Three at a time, William and um … two go in there

Researcher: Do you read together?

Child O: We read a book and … er ...

Researcher: Do you read out loud or in your head?

Child O: In my head

Data collected in School F about the materiality of the *polar explorers'* book corner were especially valuable when considering the materials that the nook might be made from. The *polar explorers'* book corner was perceived as a precious space by children as well as teaching staff and the children's care and attention to the structure and the fragile materials from which it was constructed was notable. This respect shown towards the book corner by the children led me to consider using a less substantial material than Perspex (originally) or plywood (subsequently). Had I not observed the care that children took in School F inside their much-loved, classroom reading space, I may not have accepted the suggestion from Jenx to construct a prototype nook for further research with children using cardboard. Children followed rules about who could use the book corner and for how long and I witnessed it being used regularly for quiet or shared reading, unlike another beautifully designed reading pod in School Q that was infrequently used due to its position in the corridor and the need for adult supervision when using it.

Each child who participated in the study generated a unique set of images of the spaces where they read. These data were linked to comments they made and my notes about their physical and emotional responses to a space. Elements of this dataset were shared with the architect and design team at SCABAL in response to prompt a critical analysis of the viability of the original nook and its key features in each school setting. My analysis showed there to be wide variations in the children's perceptions of themselves and in their status as readers and this gap between 'top' and 'bottom' readers, although potentially caused by the streaming of children, convinced me that the nook should be primarily a space in which children could read privately without being watched. This response fed directly into the design of the second version of the nook, with its three windowless cardboard walls, and enough space inside for children to sprawl across the floor and lie down as well as sit or stand.

The engaged response of lower group readers to the brightly coloured library furniture encouraged a more playful response to the nook design, prompting the addition of bright-green artificial grass on its floor. I encouraged the architect to maximize the appealing elements of the nook, such as a child-scaled doorway, to invite children inside, especially those who might be more reluctant to read in a public space.

4.3 Phase three

4.3.1 The functionality of the second iteration of the nook

The findings of the empirical research fed into the third phase of research which resulted in a series of small 3D models of the nook, made by the design team and, ultimately, a finished nook prototype.

Figure 4.25: A selection of nook models by the design team at SCABAL

Between the first version and the finished prototype, the nook was re-designed to fulfil the following, observed needs in schools:

1. The need for a well-designed alternative to the classroom book corner and/or role-play area, offering teachers who have little design training, time or funding a piece of ready-made furniture in which children can read for pleasure.
2. The need for a well-designed space where individual children or groups of children can read without an adult, for example, during guided reading sessions and have suitable, high-quality books within easy reach.
3. The need for a quiet, calming space for reflection and retreat.

The annotated images below, highlighting features of the nook prototype were taken in two London schools for the subsequent research project, see Appendix D, in which the nook was used as a research tool.

4.3.2 Feature A: the nook as an alternative book corner

The nook fits snugly into corners, saving space.

Robust, safe shelving on the exterior of the nook offers excellent display for varying sizes of picture books.

Cardboard walls can be decorated and personalized by children.
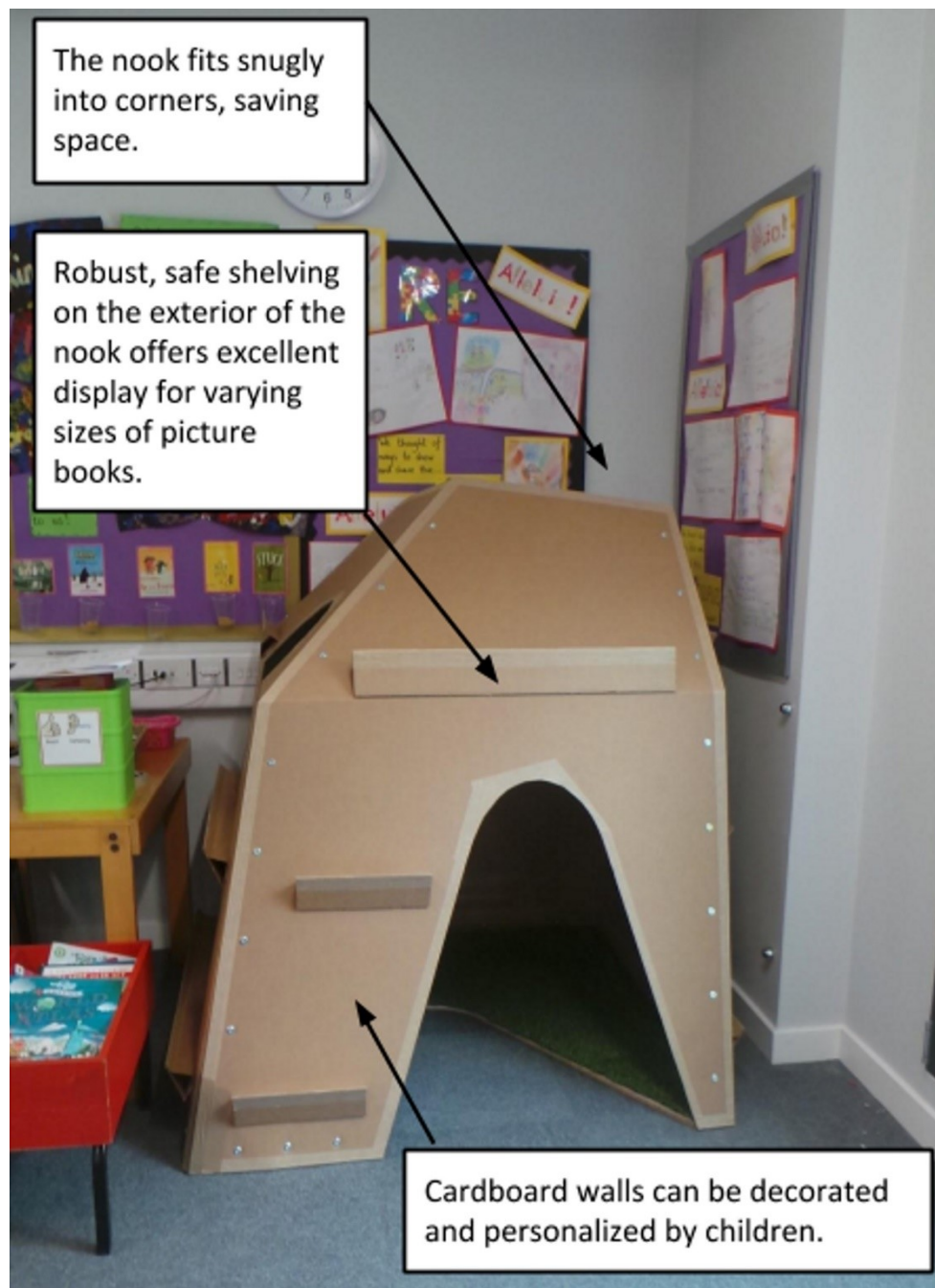
Figure 4.26: Nook prototype image

The nook is now a sturdy but lightweight, freestanding piece of furniture on which books can be displayed, giving every child in the class the opportunity to select their favourites. Up to six children can sit or stand inside the nook. It can easily be moved within the classroom depending on the needs of the class and teaching staff.

Figure 4.27: Assembly of the nook

The bench and table were not included in the prototype because the findings and the literature indicated that a freedom of movement and comfortable posture was more important than seating. Two emergent readers taking part in the study specifically expressed the wish to lie down when looking at a book. Assembling a bench and table would have also complicated the installation of a nook, making it heavier and more difficult

to move easily. It may also have limited the number of children who could sit inside at any one time.

The cardboard edges of the walls and openings are sealed at each edge and corner with masking tape to ensure that there are no sharp edges. The non-laminated cardboard shell invites children or teachers to attach permanent or temporary decorations to its walls, both inside and outside, or to paint and draw on them.

This prototype is smaller than the original version developed in phase one and its design utilizes the corner area of the classroom more effectively. It was designed to fit into all seven of the Year One classrooms surveyed.

4.3.3 Feature B: visibility, seclusion and accessibility

A new balance achieved between visual and acoustic seclusion.

Good ventilation through door and roof.

Child-scaled, smaller in dimensions than the first version of the nook.

Sense of privacy for children balanced by opportunities to hear and see inside nook by staff.
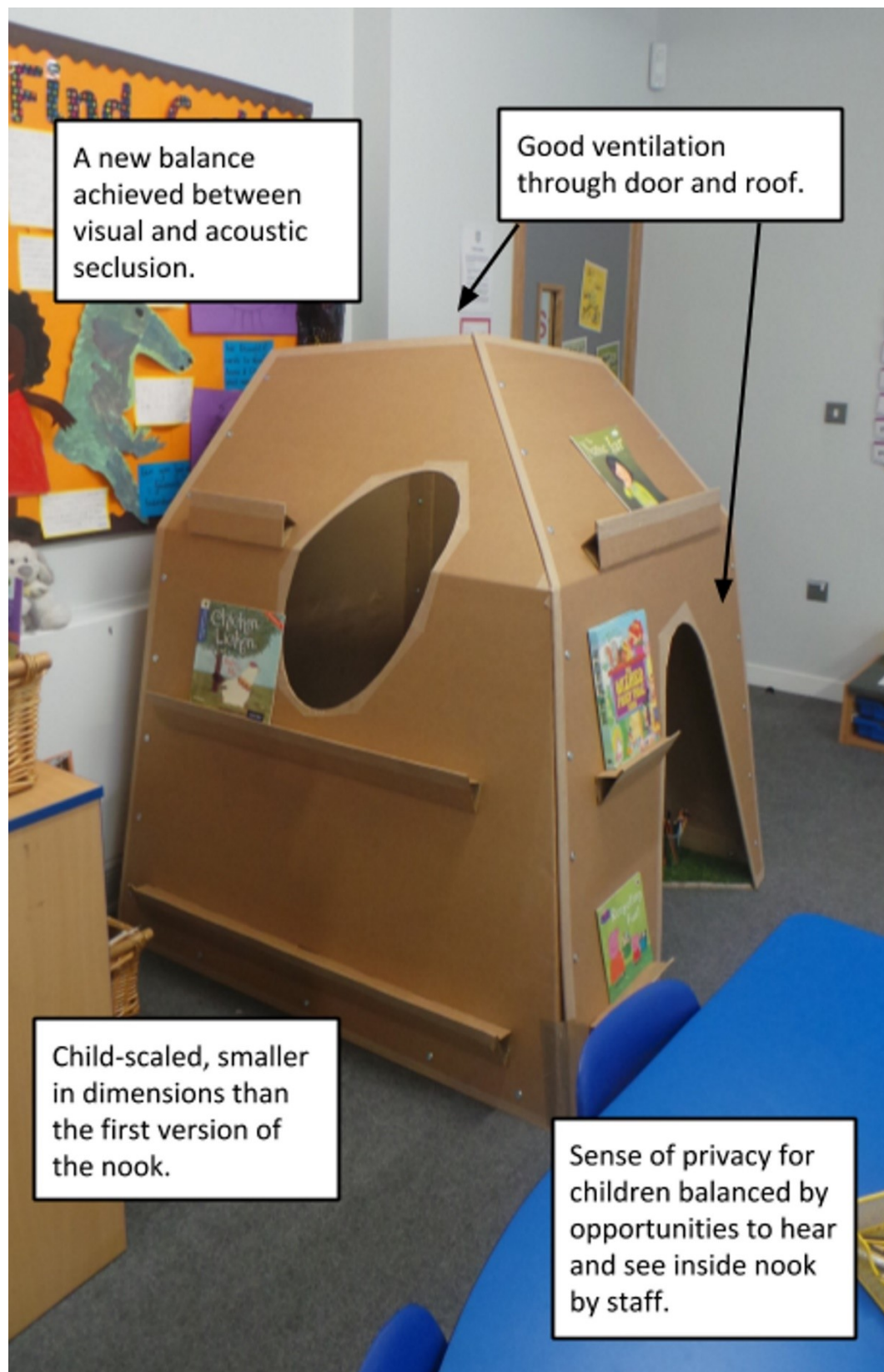
Figure 4.28: Nook prototype image

Some of the teachers participating in the study expressed the opinion that children should be able to separate themselves from distractions and escape from scrutiny, while others felt that children should be visible and supervised at all times. The prototype nook attempts to offer a balance between these divergent opinions. While it is more visually secluded from disturbances and interruptions than the previous iteration, teaching staff can easily look inside through the door, window or roof and hear what is going on inside. This means that children are given a sense of privacy inside the nook but they can be monitored by the teacher when necessary.

Since the nook is no longer being used as a space for instruction by adults, its dimensions are more proportionate to the primary-age child, with a smaller, arched entrance cut into its front-facing wall that is easily accessible to children. This is intended to give children inside a sense that this is a space for them, just as a playhouse or 'Wendy-house' might be designed to be child-sized rather than to accommodate adults. However, it is important that the nook is accessible to all children and the question of access for children who use a wheelchair is one that is still to be resolved. Advice from Jenx, who specialize in furniture for children who require postural support to stand and to sit, is being sought on this question in relation to further projects.

There is now ventilation through the window, door and roof, making the inside of the nook a similar temperature to the rest of the classroom. An internal fan, which was integral to the first design, may have been noisy, heavy, expensive and complicated to install. This is no longer needed; however, these changes mean that complete acoustic protection has been lost and noise from inside the nook could distract others outside the nook and vice versa. Further research is needed to establish the success of this new balance between acoustic and visual separation and ventilation in a working classroom.

4.3.4 Feature C: guided reading in the nook
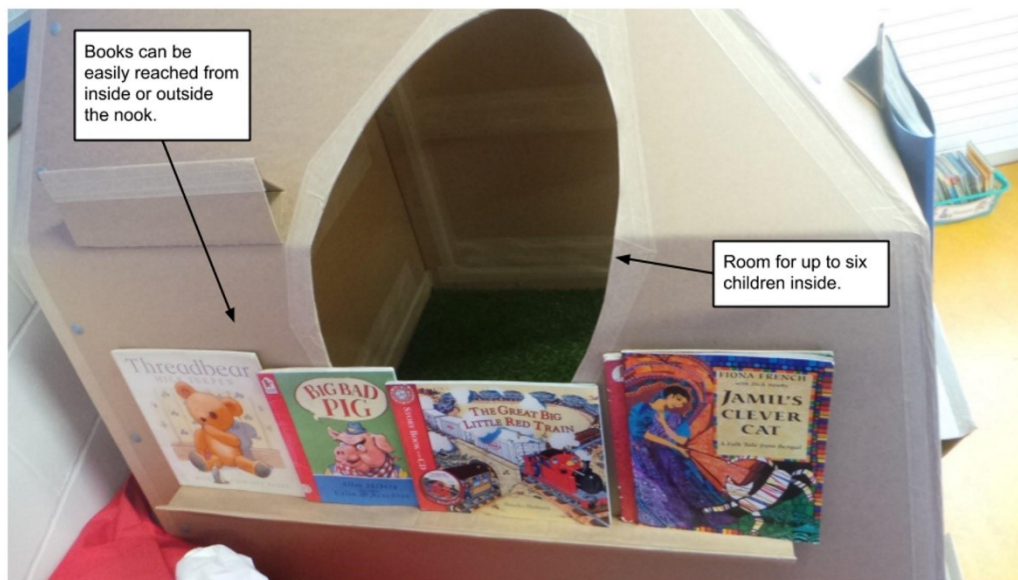
Figure 4.29: Nook prototype image

During daily, guided reading sessions, the classroom book corner is used by teachers as a space where a group of children can enjoy choosing books and reading independently without supervision from staff. However, when book corners are inadequate, too small or poorly equipped, children in this group may become distracted and cause distraction for others. The nook aims to improve this situation by providing one group of children with a space where they can choose and share a wide variety of books and, crucially, have easy access to those books without having to go to different areas of the classroom where they might interrupt others. The side window, with shelving underneath on the exterior wall, allows children inside the nook to reach books without having to leave the structure and potentially settle quietly rather than moving around the classroom during these sessions.

4.3.5 Feature D: the nook as a calming space, den or role-play area

> A restful, soothing space.
>
> Soft, warm, textured materials: cardboard and artificial grass.
>
> Marks a spatial boundary with the classroom: a different type of pedagogy is suggested.
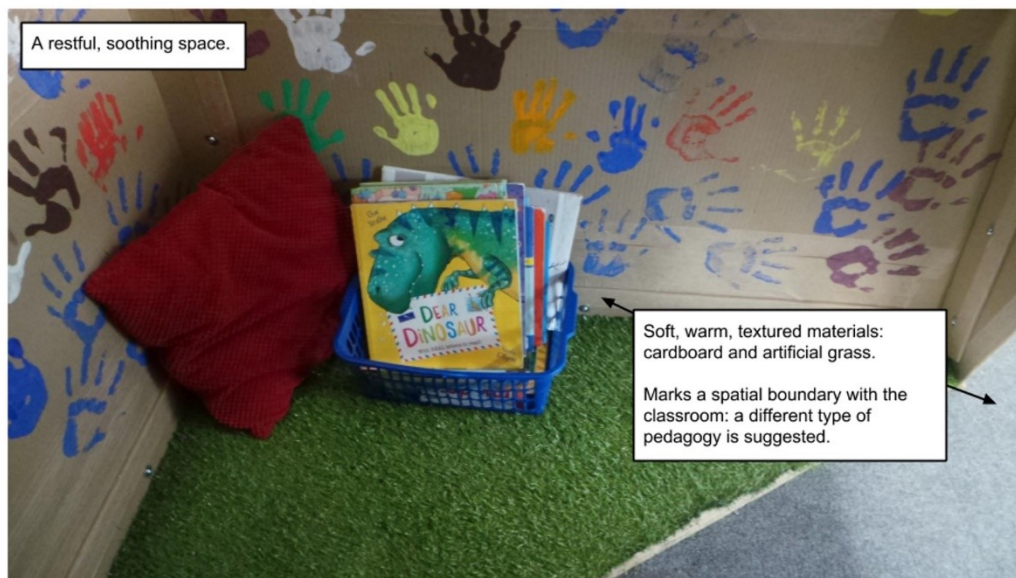
Figure 4.30: Nook prototype image

Three of the special needs teaching assistants in the study regretted the fact that the children they worked with did not have a regular, comfortable space in the school or in the classroom where they could calm down when they felt agitated or overwhelmed. This is addressed by a less brightly lit interior to create a less sensorially challenging space for children with autism, who can find artificial lights and strong colours overwhelming. The nook prototype draws upon on two main sources of light: illumination from above (ceiling lights in the classroom that illuminate the space through the hole in the roof) and through the side-window and doorway. The position of the nook in relation to the lighting above it and its proximity to windows will change the level of light inside. Lower levels of light could be supplemented with LED lights attached to the interior of the nook or by supplying torches to give children control over the level of illumination that they require.

In School F, the *Percy the Park Keeper* role-play area doubled as an additional space for reading tuition. The design of the nook, however, eschews a particular shape or decoration that might imply a single function, for example, as a castle, allowing children to make their own imaginative interpretations. The prototype nook could be used as both role-play area and book corner, in line with the requirements of the class.

Although the nook could not be defined a den, since dens are places that children either claim or build for themselves, (Kylin, 2003) the nook potentially marks out a "spatial boundary" (ibid.) between the child and the rest of the classroom when they are inside. Like the reading carrels mentioned in 2.3.1, the design of the nook acknowledges the importance of being in a protected space within a space for activities that require concentration. In this way, it is not only a cosy nest (Hertzberger, 2008, p. 35) but also offers a vantage point through the door and window in recognition of Hertzberger's "cupboardness" (ibid. p. 108).

Figure 4.31: The nook prototype, decorated by Year One children

Chapter Five: Discussion

This chapter discusses the value of using a design research methodology to conduct educational research and research about school design. It begins by describing how the paradigm of HCI offers an innovative approach to studies in these fields before evaluating the specific framework used in this study phase by phase. The challenges generated by this framework are discussed and the wider benefits and disadvantages of using design research methodologies in educational studies are considered, noting where elements of this approach may appear to be antithetical to the epistemologies of the field. Finally, I discuss the impact of designing for beginner readers and the potential benefits for the specific cohort that is the focus of this study.

5.1 The contribution of an HCI paradigm to educational research

Four clear innovations arising from the use of a design research paradigm for educational research emerged during the study itself: a novel approach to the field of school design; an emphasis upon relationships; a correspondence with a phenomenological perspective and, within the specific model used (Fällman, 2008), the production of an artefact. These are developed below.

Firstly, adopting an HCI paradigm reframes the focus of research away from the somewhat intractable debate about whether good school buildings generally improve the attainment of students and offers a more specific context. For many years, researchers in the field of school design have been striving to define whether, and if so how, good school design benefits students. Although there is little disagreement that poor design adversely affects them, the complexity of the field, the multitude of research paradigms involved and difficulties in agreeing upon what constitutes good design mitigate against a consensus amongst researchers, policy-makers and those involved in designing and constructing schools. In turn, this lack of consensus has led to a stagnation in the field and, in English

schools, designs that are "fit for purpose" and achieved at minimum cost in the shortest possible time are currently promoted by the DfE and EFA as aspirational.

Adopting a design research model from HCI model innovates by framing an examination of which aspects of design might benefit a particular cohort of pupils, resulting in conceptual and physical propositions of what good design for beginner readers might look like: models that can be used as the basis for participatory research with children in schools to develop an understanding of how design might support their needs.

Secondly, an HCI approach offers innovation by focusing on the relationship between humans and artefacts at the point of their interactions. These relationships may be digital or analogue, individual or societal, or between designed artefacts and the end-user. A focus on the point at which humans and artefacts interact, i.e. their interface, offers a perspective shift that can aid the researcher in identifying practical changes. Conversely, the interface between architecture and education that constitutes school design is sometimes ill-suited to addressing key relationships, especially between the end-users of school buildings and their designers: notably the relationships involving teaching staff and pupils with architects. This is reflected in a lack of attention to the relationship between readers and the spaces in which they read. The paucity of post-occupancy studies in new English schools and of engagement with users of the buildings leaves architects and designers ill-informed about the day-to-day activities that take place in the school and pupils and teachers habitually "making-do" with less than ideal conditions for teaching and learning.

Thirdly, HCI with its emphasis on the relationship between the human body and designed artefacts, brings an innovative emphasis upon the importance of the physical, sensory and bodily aspects of children's experience of school. In Chapter Two of this thesis, I argued that the dominant paradigm for the teaching of reading in English primary schools, primarily through a programme of systematic, synthetic phonics, neglects the physical aspects of learning to read even though they are a significant feature of every child's experience. The EFSA, client and agent of delivery of a high proportion of new school buildings, has also failed to recognise the physical and bodily aspects of a child's experience of school and the

interface between the child and the building. HCI, however, seeks to understand how end-users interact, play with and experience design. Introducing an HCI framework in the field of school design is an innovation that is intended to promote further research into the lived experiences of pupils and teachers as end-users of school design in the spaces they inhabit within the school building. The consideration of how those spaces could be improved to enhance these experiences is an equally important aspect of this study.

Fourthly, Fällman stipulates that when his trivalent model is employed, an artefact must emerge from the process. This is an innovation that invites the education researcher to engage with real-world issues, such as budgetary limitations, deadlines and with experts in the field. In this study, those experts included architects working in private practice and for the government; furniture designers and manufacturers; building contractors; specialist reading teachers; teaching assistants and acoustic materials experts. In this way, the framework encourages communication and collaboration and encourages the researcher to look beyond their own area of expertise, whether that be academic research or product design.

5.2 Valuable aspects of Fällman's framework that enhanced this study

5.2.1 Phase one

One of the most valuable attributes of the Fällman model (2008) is its triangular form, connecting two elements for design activities at any one time and isolating a third in a sequence chosen by the researcher. During phase one, "design studies" and "design exploration" elements were emphasized and "design practice" was isolated. As a result, a virtual, aspirational, research-driven iteration of the nook could be created without the constraints of practical considerations of budget, materials or assembly. Architectural and design concepts, such as Bachelard's "nests" and Hertzberger's "cupboardness, see 2.2.2, were explored in tandem with studies from the field of education that considered children's

responses to and thoughts about reading. Thus, the beginner reader and their requirements as a reader were situated at the heart of the original design rather than, as might have been the case without the framework, a consideration of the practicalities of school buildings and their classrooms. It is no coincidence that this framework was primarily developed for the doctoral researcher, who has time to imagine an innovative approach to design without necessarily finding the best way forward immediately. Fällman's framework, in offering the researcher the ability to define a window of separation from economic and time constraints, allows imaginative, thoughtfully researched solutions and for further questions to emerge: a facility not afforded to the practitioners of real-world school design in England for whom budgetary constraints and limitations are restrictive of imaginative, propositional designs.

The focus on design studies activities in this phase required research into the teaching of reading and the current reading curriculum in English primary education, prompting a realization of how significantly this has changed over the past two decades, in contrast with the design and arrangement of spaces for reading, which have changed very little during this time. A dependence upon a programme of phonics for beginner readers demands high-quality acoustic design so that sounds can be distinguished and yet the spaces in which readers learn often fall below these requirements. The framework's facility to focus on research literature and design propositions, temporarily isolating practical issues, encouraged the development of an innovative model nook to address this.

5.2.2 Phase two

During phase two -- empirical research in schools -- the framework supported research into the relationship between the end-users of the school building and the spaces they inhabit when reading and teaching reading. Real-world, physical, material, sensory and bodily experiences of beginner readers and their teachers' designs and arrangements for reading were considered in conjunction with the specific affordances of seven school buildings.

The emphasis on the design practice and design exploration elements of the triangle during this phase enabled the theoretical research (design studies) to be put aside in favour of a stronger focus on the actual experiences of the end-users of the school building. While the outcomes of this phase of the research can be viewed as a stand-alone, original piece of research, they also contribute to the subsequent design phase by providing untapped knowledge about the qualities of spaces where readers read. This element of the research could also be regarded as a creating a contribution towards the body of design studies materials available for informing school design for readers and for the teaching of reading, making this knowledge about the relationship between readers, teachers and the school building available to architects, building contractors and policy-makers.

Fällman's framework promotes an analysis of the interface between the end-user and the designed artefact. During this phase, examples of design exploration and design practice undertaken by teaching staff to adapt spaces for teaching were elicited. A valuable example of this was an interview with a newly qualified teacher who reported that she had taken photographs of her classroom before the summer holidays and copied the exact spatial arrangements of the teacher who preceded her, see 4.2.2.1 *The classroom*. This interview revealed some of the specific design-oriented difficulties that one end-user, in this case an inexperienced teacher, needed to overcome in order to do her job. Another instance of useful information elicited in following the framework emerged from discussions with teachers about the withdrawal of pupils for reading tuition and the availability of small-group rooms as designated spaces for supplementary reading activities. Several teaching staff in different schools complained that these small-group rooms were often unavailable due to high demand. The level of provision for small-group rooms (in new schools) has been determined at a national level by the EFSA: i.e. that three or four classes (between approximately ninety and a hundred and twenty pupils) should share one small-group room between them. These rooms are also used by special needs assistants as calming spaces for children with SEN in their care, which places an even higher demand upon the availability of small-group rooms. The framework elicited the knowledge that the interface between the end-users of these rooms (children and teaching staff) may not currently be fit for purpose because demand for these spaces is high and availability is low and also that other spaces in

the school that may be less suitable for reading are currently appropriated for the same purpose. Without the framework in place, a study of the frequency of use of these rooms could have been undertaken but the design element, which promotes change, would have been lost.

5.2.3 Phase three

The design practice and design exploration emphasis of the activities undertaken in phase two raised challenges to the viability of the first, conceptual iteration of the nook being placed in all seven schools included in the study. In keeping with the iterative nature of the framework, this prompted the integration of the observations I had made about schools, teaching staff and readers -- including common problems and individual idiosyncrasies associated with school buildings -- into the design of a second nook. During this phase, the manufacturer collaborating in the project, gave detailed advice about practical aspects of the design such as appropriate materials and safety considerations. These considerations had a major impact on the design but because of the framework the valuable creative response to the original research proposal (design studies to design exploration) had already taken place during phase one and was preserved, limiting the practical questions to be dealt with at the level of minor design problems rather than guiding principles for the nook itself. This was a clear demonstration of the framework adding value to the development of a design.

This phase of the research focused successfully on the emergence of a second iteration of a designed artefact as a response to the findings prompted by research questions. Fällman equates the value of designing an artefact or prototype with "the way natural scientists may only be able to test a theory by first designing the tools with which to study a proposed phenomenon" (2007, p. 197). The nook prototype provided a valuable innovative research tool that was ready to be installed in schools to allow further research about beginner readers and the spaces they occupy and require there. The value of this outcome is emphasized by its potential utility, as a pilot study for further research into school design

and beginner readers or, alternatively, for research into other aspects of school design and the end-users of the school. In the course of this study, I became aware of the opportunities offered by the framework for further research into and understanding of the way in which children with autism and other special needs currently use the school building and how their experience of school could be improved through design.

5.3 Challenges and frictions when using the framework

The challenge of demonstrably making progress throughout a design process is ever-present, along with that of representing it to others. In the architectural journal *Field*, Udall and Holder reported that a group of doctoral students attending a symposium had identified a "disconnect between the research process as "written up" or presented in research methods literature (a linear, directional progress from ontology to methodology and methods), and the research process as we experience it" (2013, p. 132). The research process experienced by these architectural researchers was described by them as "a tangled back-and-forth, with an ontology emerging throughout the process of developing methodology and collecting data" (ibid.). This is also a characteristic of design-oriented research, which is iterative rather than schematic or programmatic and which focusses on possibilities rather than a single outcome so that the new knowledge that emerges may even alter the design process itself, as necessary. Fällman's framework recognises the non-linear, entangled nature of such research studies and strives for clarity and focus by proposing that any one of the three research activities identified in the triangle can be put aside at any one time, thereby also reducing the friction of all the contrasting pressures on a design being applied at once. However, Fällman does not recommend an approach that solves the problem of the disconnection between this entangled research process and the presentation of this process in the thesis. As a student registered to a Faculty of Education within the School of Social Sciences, the matter of presenting outcomes has been even more vexed, since the translation of Fällman's framework is not easily achieved within a thesis that abides by the conventions of the social sciences. The first draft of this thesis was modelled upon the triangular framework itself, revealing aspects of each phase of the

research as findings that contributed to the next phase. Further drafts were created to enhance the accessibility of the thesis by adhering strictly to the social sciences prescription of Literature Review, Methodology, Findings and Discussion etc. which risks losing some of the vibrancy, interconnectedness and iterative nature of the model but which, I hope, gains clarity.

Researchers working in fields beyond design, such as education, may feel daunted by Fällman's model because, as he explains in his 2008 paper for a design journal, it was originally intended for doctoral students within a design discipline. As a teaching professional with only a layperson's experience of design beyond the classroom, I was unsure whether I could utilize a framework that seemed to require a knowledge of design that was well beyond my own. However, since the framework was designed specifically to encourage doctoral students in the field of HCI to experience of range of new skills including "being part of a multidisciplinary team; learning to communicate with managers, sales people, and engineers; working under strict and suddenly changing budget constraints; negotiating with clients and other stakeholders" (Fällman, 2008:6), I found that the framework compensated for my lack of experience in the design field by promoting "commitment and engagement" (ibid.) and "involvement and participation in a team effort" (ibid.) rather than a reliance upon design expertise alone. This ethos substantially reduced friction that might have impeded progress and advanced the researcher in meeting the challenge of creating a designed artefact. Wider use of the framework and an established understanding of its use would further reduce the challenge of using it successfully. However, to encourage further use of the framework beyond the discipline of design, further dissemination of Fällman's framework is needed. This promotion is unlikely to take place by the author himself, who is currently Design Director at a global management consulting firm.

5.4 The benefits of a design research approach in an educational research context

A contention of this thesis is that design-oriented research could be of benefit to educational studies by challenging long-established practices, designs, spaces and routines that appear to be neutral, common-sense or traditional when, in fact, they are no longer effective or suitable.

It is not without precedent for educational researchers to bring a perspective from beyond the field of education to suggest significant, systemic changes that could be made within it. Professor Mitra, a professor of Educational Technology with a background in physics, claims that the advances made over the past thirty years by information technologists could and should make current models of schooling obsolete. Mitra conducted a series of 'hole in the wall' experiments, placing computers connected to the internet in public spaces where children could find them. He discovered that young children, regardless of their social, economic or cultural background, could learn to use these computers and access information from the internet without any support from adults (2005). Mitra argues that while the primary function of public education in the nineteenth century was to provide empires with a continuous supply of literate and numerate clerks, the needs and resources of contemporary societies are substantially different and that education should be re-evaluated in this context (ibid).

Mitra's research suggests that educational practices and the buildings in which those practices take place are often handed down from generation to generation without a critical examination of whether they continue to be of value. Pupils continue to be examined by means of written tests and tests continue to be graded as evidence of the pupils' suitability for further study and employment. Even the materiality of writing instruments used in classrooms has changed little over the past century. Despite the presence of tablets and laptops in many classrooms, pupils continue to be drilled in reading, writing and calculation rather being given the opportunity to explore the world by accessing appropriate technologies that are well within their abilities to use and that would be, Mitra suggests, a preferable method of learning.

Design research can be an innovative way of promoting change. During phase two of this study, I also observed a very traditional form of the delivery of knowledge from teacher to pupil in primary school classrooms, with children sitting at tables to write in pencil in exercise books, which would then be marked by the teacher. Also notable was the uniformity of the delivery of the programme of studies for reading across all seven schools. Guided reading sessions followed an almost identical pattern in each classroom, the only variation being the texts that children at each streamed table were reading. This scenario suggests that despite the extraordinary technological advances that have changed the world of work beyond recognition in many industries, methods of educating children and the design of the buildings in which they are educated, consistently resist change. Design research is suggested in this context as a discipline that promotes change by stripping away established concepts and practices that are taken for granted, embedded and unnoticed.

Design research can prompt fundamental questions about the purpose of education by asking what it might mean for education, primarily for teachers and for schools, if children could learn by themselves, aided by easily-accessible technologies. This study takes a less radical approach than the one chosen by Mitra: rather than creating a situation in which learning may take place and assessing the responses to it; the actual spaces where readers read are investigated through the prism of design with the ultimate aim of considering how they could be improved. Design-oriented research (Fällman, 2007) in this context includes an investigation of the routines and practices for the teaching of reading; the spaces in which reading takes place and the qualities and attributes of those spaces.

A design research approach prompted interviews with teachers that were a valuable element of the methods employed in this real-world research because although some of the teachers' concerns about the spatial arrangements for reading were specific to their location, others were directly linked to particular teaching practices that were observed in all schools. An example of this was the spatial problems connected with the management of the daily guided reading sessions, in which several groups of children were expected to work independently on reading-based activities without supervision. As one teacher explained:

"It's just so frustrating and the frustration just pours out. You're supposed to have the children super-calm and completely silent when they're learning to read."

This is one instance in which school design does not support the pedagogy that is being taught in the classroom and represents an opportunity for design research to make a valuable impact. In every classroom that I visited, guided reading groups were seated at group tables except for one group who were assigned to the book corner to choose books. In several classes, I observed that a noise and activity from the book corner group caused the class teacher to interrupt her work with another group to remind them to lower their voices and not disturb others. However, this group of children were also being encouraged to choose books freely and to read for pleasure. The discipline demanded by the guided reading activity did not sit well with the freedom afforded to a single group and therefore I addressed this dissonance in spatial and pedagogical relations in my second iteration of the nook. Design, in this case, does not recognize any practice, object or space as neutral and rather than seeing the group of children in the book corner as a potentially rogue, disruptive aspect of the guided reading, I redesigned the nook as a space where their needs during this daily practice could be met.

One of the assertions of this thesis is that design disrupts the neutral, the natural and the normalized view of practices, routines and spaces. When we look at reading through the lens of design, the physical, spatial, bodily, sensory aspects of reading hove into view. However, even though design-oriented research can challenge solidified practices, routines and spaces in schools that may be invisible to the end-users, procedures and policies at a school or a national level may prevent them from being challenged by the end-user.

To place the value of design research in context, an aim of this study was to make the practices, routines and spaces more visible to the end-user and to demonstrate to them, and if possible to architects, contractors and policy-makers, that they could be reimagined in different spaces and locations. Viewing education through a design lens prompts the important question: "What is taken for granted in this space or in this practice?" If the provision of a nook in a single classroom can encourage a re-evaluation of how space is

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used, even if it is only during the daily guided reading sessions, then the spatial aspects of reading may reveal themselves to the teacher, who can, in turn, re-evaluate their own approach if the current one is not working.

5.5 Design-oriented research and epistemologies of educational studies

When engaged in design activities, the framing of research questions can be as significant as a single outcome or product. Fällman recognises "the parallel emergence of question and answer" as a feature of the design process (2008:17). Because of the potential for design propositions to change the multiple features of the outcome, previously gathered evidence may no longer have the same meaning after the introduction of a new design into the environment. In this way, design is not exclusively evidence-based, neither does it generally depend upon statistical analysis and therefore a flexibility of approach welcomes the reframing and adaptation of research questions as an aspect of the design process. Design holds lesser regard for the statistics that may be produced to support an argument because undocumented factors may change the impact of the conclusion the statistics imply; instead, it alters the research paradigm to peer closely at what is visible, evident and tangible and how that might be transformed to create a different outcome. A design lens, when applied to education, encourages the researcher to engage with the potential for multiple transformations and change.

In this study, Fällman's triangular model separates out the three design activities so that an imaginative vision (*design exploration*) need not be tempered by *design practice* (real-world considerations) until an integration of all three activities is required. This allows the researcher to consider many aspects of design for beginner readers that could potentially be changed before settling upon the design of an artefact that demonstrates and reveals the choices made. This aspect of design-oriented research, in which the findings are demonstrated by the changes made rather than evidence gathered, may appear to some

observers to be too fluid and lacking in the rigour expected of educational research, particularly if the paradigm of research is not clearly presented.

Design, as a discipline, views the end-users as significant. User experience design, also known as UX, aims to improve the interaction between the designed product and the user. In HCI, the experience of the end user is fundamental to the success of the design. Without claiming that educational studies disregard the experiences of the "users" of education, unlike design, the end-user, whether they are characterized as a local authority, school, group of teachers or pupils, may not always be central to the research or research outcomes.

The cost implications of a design review for reading in a school may be challenging to stakeholders and funders. Changes prompted by design can be inexpensive and still make a significant difference. However, a design audit of the qualities of spaces for readers may also reveal that furniture, storage and even the shape and size of rooms may be inappropriate or unsuitable. Once the inadequacies of the current design have been revealed, even a relatively small amount of expenditure needed to address them may prove to be too expensive for a school that struggles to fund support staff or building repairs.

5.6 Why design for beginner readers in schools?

There are many commonly and often tacitly understood agreements about the qualities and standards of public and commercial buildings, such as libraries, banks and swimming pools. Libraries have changed in response to the digital age but continue to use furniture and furnishings that are soft and comfortable and that promote a sense of being well looked-after; prisons are built without a view whilst hospital wards are increasingly encouraged to provide one. These agreements often cross national boundaries so that banks, for example, as Dudek pointed out often have sophisticated interior design with a high-quality finish (Dudek, 2000). When it comes to school buildings, these agreements are often poorly articulated, despite the need to provide a complex working environment for children and

adults. Underpinning this doctoral study is a deeply-held belief that children in schools deserve good design for all aspects of their education, whether it is design of the curriculum; the toilets; the lunch menu or, in this study, of spaces for reading.

School buildings enfold a multiplicity of activities, from dance and drama to science and maths. The school building should be considered in relation to the activities that take place within its walls, just as a library or laboratory would be, even when standardized, modular designs are employed. Rather than having to repeatedly prove that good design promotes a good educational experience and to try to correlate this to higher levels of academic achievement, an understanding of the curriculum, combined with an emphasis on the end-user of the building could offer an alternative method of approaching school design.

Children learning to read in Year One are at the beginning of what our politicians and policy-makers expect will be a life-long relationship with reading. This cohort was chosen for the study because at the end of Year One they will sit a reading test that judges them to have passed or failed as readers. It was also chosen because Year One currently represents a transition to a heavily timetabled programme of studies in reading, writing and maths. Although teaching styles were observed as more or less formal or relaxed, depending upon the personality of the teacher, the curriculum was delivered in a remarkably similar manner in all schools.

It is important that designs for reading in schools are tailored to the age, size and individual needs of the children in their classrooms. Pupils in Year Six may be reading plays by Shakespeare and daily newspapers, while those in Year One are more likely to enjoy books with images as well as text, although, of course, there are many exceptions to this rule. Even in the Year One cohort, children in each class will display a huge range of ability in decoding texts, as prescribed by the phonics programme of study, and of their enjoyment of books. However, early, inexperienced readers are more likely to be disturbed and interrupted by noise and distraction than older readers and this design need should be considered whenever addressing the question of where children read in school. If the reader shapes the space and the space shapes the reader (McLaughlin, 2015), are the spaces that beginner

readers shape adequate and suitable for their needs? Design-oriented research does not take for granted the fact that spaces in schools are perfectly designed for the needs of the beginner reader or even suitable for them simply because these spaces exist and are used for reading. Here, the needs and requirements of the beginner reader as end-user are the starting point for the research.

Chapter Six: Contribution to theory, conclusions and recommendations

This chapter begins with a summary of what I consider my contribution to theoretical knowledge to be as a result of undertaking this study. This is followed by conclusions from the study and recommendations for future research, actions and policy decisions, grouped into five categories. Table 3 demonstrates how the research questions are addressed by each of these categories.

6.1 Contribution to theoretical knowledge

This study contributes to research into reading and literacy paradigms by exploring the physical paradigm for reading proposed in *Reading and the body: the physical practice of reading* (2015) by the literary theorist Thomas McLaughlin. McLaughlin is primarily interested in fluent, avid readers and how their bodies support the "high cognitive load" (ibid. p. 21) that reading demands. In this thesis, I have developed the physical paradigm of reading by applying McLaughlin's insights about experienced readers to beginner readers in school. Taking McLaughlin's conception of reading as a physical, as well as a cognitive, social and cultural, construction, I have developed two aspects of his theoretical perspective in particular.

Firstly, I have elaborated upon the additional effort required from a body that is learning to read as opposed to one that is habituated to reading. In support of this contribution I have noted that beginner readers often learn by reading aloud in school and that consequently the mouth, tongue, lips, larynx and teeth are all employed in the service of reading. Good hearing is also required to listen to the teacher's instruction and correction, particularly with respect to phonics, and the inexperienced reader often uses their fingers to point to words as they learn. These examples of the physicality of learning to read suggest that more

attention might be paid to the physical needs of the inexperienced reader in schools by teachers and designers.

Secondly, I have developed McLaughlin's interpretation of how fluent readers interact with their environment including their ability to cocoon themselves by blocking extraneous noise and visual distraction. I have applied this understanding to beginner readers who are not yet fluent or experienced. In doing so, I have drawn more deeply than McLaughlin upon Merleau-Ponty's phenomenological understanding of proprioception and the entwinement of the physical body in the material world. This perspective has been used to advance my observations about the relationship between the body and the space inhabited by the reader in schools. These observations have been used in this study to imagine ways in which designed spaces might cocoon beginner readers from interruption, distraction and discomfort in the public spaces of the school building.

A third contribution to theoretical knowledge in this thesis moves beyond a paradigmatic conception of reading to suggest how reading research in particular and educational research in general might benefit from a consideration of the somatic aspects of learning in addition to the cognitive, social and cultural aspects that are more frequently acknowledged by scholars. In Chapter Two of this thesis, I brought together a wide range of literatures, including children's geographies, the history of childhood and architecture and design, with the aim of bringing a fresh perspective to a general understanding of where children learn to read in school, where children could read and the qualities of those spaces.

This study also aims to contribute to existing theoretical knowledge in the intersection between education and architecture, i.e. the design of school buildings. It proposes a phenomenological basis for gathering knowledge about the spaces that are being researched; an iterative approach to architectural design; and the use of Fällman's framework to initiate a creative and practical response to our changing understanding of how and where children learn in school. Fällman's framework originated in the field of Human Computer Interaction but, as I have suggested in this study, it might also be effectively employed in educational research that has a design or spatial component.

The framework is particularly helpful to researchers and designers in its sequential isolation of one aspect of the design process to foreground the other two. In the first phase of the study, for example, the element of design practice was set aside in order to focus upon the relationship between academic research (design studies) and the imaginative development of the nook concept (design exploration). An empirical study using design exploration and design practice activities was then used to build upon the new theoretical knowledge that had emerged from the first phase of research. This identified types and qualities of spaces where beginner readers read in the English primary school, which is a further original contribution to both reading and educational research.

It is my hope that the new theoretical knowledge reported upon in this thesis might encourage the designers of school buildings, as well as teachers, to pay attention to the different physical and spatial requirements of beginner readers and their fluent, experienced counterparts in relation to acoustics, comfort, freedom of movement and seclusion from distraction. This, in turn, could lead to a challenge of spatial practices and arrangements for reading in schools that teachers, architects and researchers have become habituated to, thus encouraging an "imaginative leap to envisage how it might become otherwise" (Blundell-Jones, 2014, p. 13).

The remainder of this chapter reviews the conclusions of this study and makes recommendations for future research, actions and policy decisions. These are grouped under five headings. Table 2 shows where the research questions are addressed in each of the five sections.

Table 2: Research questions and conclusions

Research questions	Sections in this chapter
RQ2. Where do beginner readers read in schools?	Addressed by answering subsidiary questions A-D (see below)
A. In which types of space do beginner readers read?	6.2 Where beginner readers read in school
B. What are the qualities and attributes of the designed spaces and areas where beginner readers read?	6.4 The relationship between school buildings, standards and individual readers
C. How do members of the teaching staff design for reading for Year One pupils?	6.3 Design of spaces where beginner readers currently read in schools
D. Do beginner readers in Year One all read in the same spaces in their school?	6.2 Where beginner readers read in school
RQ1. Where could beginner readers read in schools?	6.5 Supporting teaching staff in design for reading 6.6 Using Fällman's framework in education research

6.2 Where beginner readers read in school

This section addresses Research question 2 and subsidiary question A, identifying the types of space in which beginner readers read by making a distinction between the needs of expert and beginner readers and how those needs are met in primary school buildings in England.

Experienced readers can habitually block their consciousness of their surroundings and of their own bodies to concentrate on the content of what they read. However, beginner readers, especially those who are very young, are more attuned to the physicality of reading and more vulnerable to interruption from noise or distraction by other people. This difference is exacerbated because reading for the beginner reader in school is often

performative: not only must they read aloud to adults who can correct any errors or misconceptions but they also read in public rather than private spaces such as classrooms or school libraries where they can be overheard by other children and adults. Performative reading practices are required by the curriculum guidelines and assessment practices and the latter have encouraged a homogeneity of teaching routines and practices across Year One primary schools in England, with daily guided reading sessions and phonics lessons a feature of this uniformity. Within this model, the streaming of children in Year One by ability groups for reading has become common practice and the requirement for all children to pass a phonics screening test at the end of the school year means that supplementary tuition in reading is prevalent for individuals and small groups in this year group.

In addressing subsidiary question D, which asks whether all beginner readers in Year One read in the same spaces in their school, it was found that classrooms are often unsuitable spaces for individual tuition while a whole-class lesson is being delivered. Reading aloud can be noisy and distract others. Teaching assistants and reading volunteers regularly withdraw children from the classroom for tuition and take them to other spaces in the school building. Children who are perceived by their teachers to be less proficient readers were more likely to be withdrawn from the classroom to read in spaces beyond the classroom, unless there is special provision for a secluded reading space inside the classroom, as in School F. The research carried out in this study demonstrated that the spaces to which these children were withdrawn were often unsuitable for reading tuition due to the small number of small-group rooms available in schools, which are also often oversubscribed. Consequently, children who have been withdrawn from the classroom because they have a perceived need for extra reading tuition often receive this tuition in areas of the school that are likely to be noisy, uncomfortable, reverberative and distracting. If these children have hearing loss, special educational needs or if they are learning English as an additional language, they are likely to be further disadvantaged by poor acoustic design and interruption from other children and adults. Research undertaken in this study provides evidence to show that the qualities and attributes of the spaces where beginner readers learn to read in the school building may have a negative impact on their reading. It has also aimed to shed new light

upon the way in which the reading curriculum in Year One is performed spatially in contemporary classrooms and in school buildings.

Recommendations

For schools and for architects and designers

Relevant research from several disciplines about expert and beginner readers, the reading body, the teaching of reading in schools, school designs and standards relating to reading could be made available to teachers and to architects and designers through an accessible website or blog about the design of schools.

For academic researchers

Three further studies, building on this research are proposed:

1. Young readers' experiences of reading in schools are under-researched. Evidence from a Finnish study by Kiiveri and Määttä (2012), see 2.1.6, suggests that children under the age of seven are aware of the physical aspects of reading even when they are not yet able to read themselves. It is recommended that similar studies are undertaken in other countries, particularly in the UK, where formal education begins at least two years earlier than in Finland.

2. A physical, sensory paradigm of reading has recently become more widely-recognized (Mangen & van der Weel, 2016; McLaughlin, 2015; Mills, 2015) and extending this paradigm to beginner readers could offer a deeper understanding of how reading is experienced by them. It has been suggested that children in key stage 2 may feel that they are being judged by their peers when reading in front of them, even silently, (Anderson, 2009) and a study of how younger readers in key stage 1 feel about reading in public is also proposed.

3. As the current paradigm for the teaching of reading means that children are being withdrawn from the classroom for additional reading tuition, more research is also needed about who takes them; where they are taken; who designs those spaces and whether the spaces are suitably well-designed for the needs of beginner readers, for example, with suitable acoustics for reading aloud.

6.3 The design of spaces where beginner readers read in schools

In addressing subsidiary question C, relating to design for reading by teachers for Year One pupils, it is notable that in the schools visited during this study, none of the children designed their own spaces for reading or had any involvement in decisions about reading design in the classroom. Teachers were presumed to have sole responsibility for spatial design for reading in their classrooms, although some benefited from the support and skills of teaching assistants, relatives and friends. There is a gap in the literature of school design for reading about how to support beginner readers spatially and physically in school.

Findings showed that beginner readers, especially those withdrawn from the classroom need spaces that have been designed to provide better conditions for reading tuition. However, high demand for suitable spaces meant that these were often unavailable and teaching staff were forced to teach reading in areas of the school building that were not designed as teaching spaces, such as corridors or dining halls. Resources that might improve design for reading, such as appropriate furniture, may be difficult to source, can be expensive and are not always a priority for schools.

When acoustic design is poor in specific reading environments, auditory interference may impair the learning of particular cohorts of children, such as those with special educational needs, hearing loss or for whom English is not their first language. The inclusivity of the school's offer of equal opportunities for all may be compromised by poor acoustic design. Although acoustic standards apply to schools, there is little evidence that they are being

tested in existing schools or even in new-build schools due to limited post-occupancy evaluation where acoustic standards may not be met, even in teaching spaces.

Teachers are held accountable for the design and management of their classroom but not for the locations to which children are withdrawn. A finding of this study was that teachers generally stay in their own classroom throughout the day while teaching and often had little knowledge of where children were withdrawn to or the suitability of those spaces for reading. Moreover, teaching assistants, who often struggle to find suitable spaces in which to teach reading are forced to improvise in poorly designed spaces.

Books are valued by teachers and seen as a precious resource. Schools often invest large amounts of money in books but sometimes fail to provide adequate resources for the display and storage of books. Picture books, which are flimsier and not of a standard shape and size, are more vulnerable to damage in poor storage than chapter books. Some teachers use their own money to provide storage and display for books but this is not always fit for purpose despite their best efforts.

There was a notable discrepancy between resources allocated to the school library and to classroom book corners in each of the schools taking part in this study, although not always in favour of the library. This indicated a lack of joined-up thinking about reading spaces in schools.

Recommendations

For schools:

Better resources to support schools in design for reading are needed, including storage and display for their expensive, but potentially fragile collection of books. Design for reading in Year One is arguably more complex than in key stage 2 and potentially costlier because there are fewer fluent readers so more secluded spaces where interruptions are minimized

are required. Resources to improve design should therefore be tailored to the needs of different key stages and year groups.

Since a higher proportion of readers in Year One are likely to need extra support with reading, this might also be reflected in the whole-school design of suitable teaching spaces available to them beyond the classroom.

Reading practices and routines could benefit from a more holistic approach: the needs of readers, teaching staff and the design of spaces where reading takes place should all be taken into consideration. It may be beneficial to undertake an audit of the suitability of spaces where children learn to read, perhaps by the Literacy Co-ordinator or Reading Manager. Design is sometimes conflated with decoration in relation to reading in schools, which is only one component of design.

Factors to consider when designing for reading include the suitability of furniture for readers and for display and storage; the auditory affordances of spaces where children learn and whether spaces are well-designed for comfort and freedom of movement. It is recommended that talking to children about what they like or dislike about existing spaces for reading should be an integral component of this audit.

For academic researchers:

More research into how design for beginner readers can be improved should be undertaken with, by and for children. This is necessary if children are to benefit from participatory projects to design their own reading spaces in schools.

For architects and designers:

The current procurement and tendering process in England for new and refurbished schools allocates a relatively small amount of time and resources to allow architects to benefit from observing children in schools and learning about how the end-users of school building

interact with the design. More engagement by architects and designers, and funding to do so, would be a valuable step forward in designing schools with spaces suitable for real readers.

Post-occupancy evaluation also gives designers the opportunity to learn from the buildings they have created and to understand how they are used in relation to the delivery of the curriculum. Standardized designs may fail to recognize the needs of certain cohorts of children, such as those with autism and special needs.

For policy-makers:

A review by policy makers/the EFSA on the subject of whether the current number of small-group rooms included in the design of new schools could be increased from one room shared between three or four classes. Cutting costs by reducing the area of new school buildings may mean that readers and children with special needs will be disadvantaged if there are not enough available small-group rooms. The wisdom of saving money on the short-term gain of reducing the area of school buildings should be set against the cost to the children themselves.

Children with special educational needs, such as autism, also need secluded, quiet spaces in which to calm themselves when the stimulation of the classroom becomes too intense for them. With more than two-thirds of all children with autism now attending mainstream schools in England, this means that more small-group rooms are required in primary schools to cater for their needs as well as those of beginner readers. Currently, these two cohorts of children are competing for a limited number of spaces in the school building and neither should be further disadvantaged by poor school design.

6.4 The relationship between school buildings, standards and individual readers

This section of the concluding remarks addresses subsidiary Research question B, identifying the qualities and attributes of the designed spaces and areas where beginner readers read. Regulations for the standards of acoustics, lighting, ventilation etc. are intended to keep children safe and healthy in school. Architects and policy-makers differentiate between "teaching" and "non-teaching" spaces in schools and these areas have different standards of performance. These regulations imply that reading tuition only takes place in teaching spaces. That is not the case. This may be because educators are unlikely to be aware of these different standards but also because there is a high demand for teaching spaces for this supplementary tuition. However, non-teaching spaces like corridors and dining halls are more likely to be noisy and reverberative. The background noise level of a space beyond the classroom may affect the beginner reader's ability to differentiate sounds: a factor crucial to their ability to learn to read. Additionally, teaching sessions are more likely to be interrupted in these open, transitional spaces.

Primary schools in England (in 2017) are being constructed with an area allocation of 5 per cent less than under the previous administration. This figure rises to a fifteen percent reduction of area allocation in secondary schools. As this occurs, it is likely that parts of the school that were formerly designated as non-teaching spaces, such as dining halls, will be increasingly used for teaching.

Despite the homogeneity of the curriculum across England, the financial and material resources that schools can draw upon to refurbish and redesign their buildings vary considerably.

The era in which a school was built may also have an impact on the number and configuration of suitable rooms available for teaching reading. Some older schools, for example, may be able to convert cloakrooms into reading rooms, however they are unlikely to have purpose-built small-group rooms unless an extension has been built.

Small-group rooms in new schools are intended to be shared by three or four classes. This might mean in one-form entry school that all children Years 1 and 4 share a single small-

group room, or in larger schools, one group room may be shared between four Year one classes. Whatever the configuration, bearing in mind that many children are leaving classroom to read elsewhere, use of this space is likely to be in great demand. This issue goes beyond reading design and might require policy level decisions for the school.

The disparity between the need for additional small teaching spaces and their provision suggests there is a gulf in knowledge and in communication between the experts who create and regulate standards for the spaces in schools and the inhabitants of the school buildings who use these spaces every day.

Without further, detailed research into the current, standardized designs offered by the EFSA, the danger is that meagre, reduced designs for new and refurbished school buildings become acceptable and that these are unchallenged by pupils and teaching staff who are not aware of the effects of political pressure for cheaper, faster, cost-effective designs.

Recommendations

For policy-makers:

A better understanding of the individual users and their requirements of the school building at a more granular level is needed to guarantee an appropriate design of rooms that support children and facilitates the delivery of the curriculum. This thesis has focused on the needs of beginner readers in the primary school. Other cohorts of children who may be disadvantaged by poor school design and who could also benefit from such a study include children with autism and children with English as an additional language.

A study of the demand for and availability of small-group rooms would be invaluable for a better understanding of their function and effective use in schools.

The absence of a rigorous feedback strategy in a system of school construction that does not recognize the value of consultation with stakeholders and end-users of school buildings (James, 2011) means that new, standardized school buildings, whilst being replicated across the country, are being designed without the benefit of learning from previous examples. To respond to the needs of students and staff, the school building should be considered in relation to the activities that take place within its walls.

To provide for the needs of beginner readers, funding should also be made available to ascertain whether standards are being met for good acoustic design in existing schools.

For academic researchers:

In recent years, the field of school design has focused upon the question of whether good design can improve academic attainment. To improve support for beginner readers, further research is required to investigate how teaching and non-teaching spaces and regulatory standards for acoustics are understood and used by teaching staff.

6.5 Supporting teaching staff in design for reading

The decisions of teachers in determining where beginner readers could read in schools are fundamental to answering Research question 1. Three factors in particular influence effective design for reading in teachers' own classrooms: firstly, the experience and expertise of the teacher as designer (or access to support with design); secondly, funding (to buy appropriate furniture, including storage and display) and thirdly, the time to engage in design activities. A deficit in one or more of these resources may result in a discrepancy between the standard of design for reading between classrooms in the same school. When asked about the design of the ideal book corner in their own classroom, teachers rarely fail to articulate imaginative plans but are often derailed in their designs by the circumstances outlined above.

During this study, teachers consistently stated that there was a lack of training in design for reading (and design of their classroom in general) during their teacher training. Many of them felt ill-prepared to tackle the spatial arrangement of their classroom for reading activities as a consequence.

When members of teaching staff have the financial resources to commission a piece of reading furniture for children, they may not necessarily be given the best advice about where to situate this furniture. Once fixed in place, it may prove difficult to move. Advice about how to design, commission or buy furniture for schools should be more widely available from a publicly-funded body, such as the Commission for Architecture and the Built Environment (CABE), the government's advisor on architecture, urban design and public space between 1999 and 2011.

Designed spaces where books can be enjoyed and shared, such as book corners in classrooms, should also be assessed and further support given to teaching staff who struggle to create these areas due to a lack of resources, training or space. School buildings are heterogeneous and a 'one size fits all' approach is not viable but if staff are well-informed about the requirements of beginner readers, designs for reading can be tailored to their own resources and spaces.

Recommendations

For schools

Teaching is a demanding and time-consuming job and teachers do not necessarily have the time or energy to share their expertise in design with less experienced colleagues. Better training for all staff in school about design for reading could improve this situation and result in a good overall standard of design for reading across the school.

Areas that could be explored during professional development sessions for teachers include: managing spatial aspects of the curriculum and relating pedagogy to design, for example, teaching reading to children on the carpet; how to manage guided reading sessions effectively; how to arrange furniture so that children can share books and how to design book corners. Other related issues such as posture, furniture, storage and display would also be valuable.

For teacher training institutions

Teacher training institutions could offer at least one extended session to teachers about how to design their classrooms for reading and about good practice in and beyond the classroom for reading. A broad understanding of acoustic design and its relationship to reading would also be invaluable for teachers in training.

A fuller understanding of what is meant by design and the value of good design in a classroom in relation to pedagogy could be enhanced through collaboration with and visits by design professionals and architects to the teacher training institution. Links between architecture and design departments and education faculties in universities could help to promote a much-needed dialogue between architects, designers and educators. Architects and designers may have innovative solutions to design problems while educators can give architects an insight into the real life of a school building and how it functions.

A specialist institute for school design within a university faculty is highly recommended.

6.6 Using Fällman's framework in educational research

To address a different aspect of Research question 1, "Where could beginner readers read in schools?", I have argued that by using a design methodology in educational research, habituated spatial practices and arrangements in school that are viewed by educators and architects as commonplace or neutral can be challenged with benefit to all stakeholders. In

the context of this study, Fällman's framework has offered a different lens through which to investigate the reading experiences of children in Year One. The framework has proved effective in demanding that all aspects that are vital for doctoral studies in design -- exploration, practice and academic research -- are fully addressed, while the research question relating to the development of an artefact, "Where could beginner readers read in primary schools?" meant that the needs of real readers in actual schools could be imaginatively addressed.

Using a design research methodology to pursue a specific study, in this case about beginner readers reading in school, also allows for tangential questions to be raised that can be explored in future research: questions relating to children with special educational needs and those who are learning English as an additional language.

This doctoral study has also offered a design-based intervention with the aim of delivering a real-world practical solution to the problem of a lack of suitable reading spaces for readers in Year One: an intervention that can be further researched, refined and developed in future studies. The nook was initially designed to be used either inside the classroom or beyond the classroom as a supplementary teaching space. Although the nook evolved into a classroom-based design, I discovered as a result of my fieldwork that there was also a high demand for secluded teaching spaces beyond the classroom for children who had been withdrawn for extra reading tuition. It is possible that the nook could be developed for this purpose in a future project but this was beyond the resources or scope of this doctoral study.

Afterword

Burke, in *Quiet Stories of Educational Design*, argues that the provision of quiet spaces in schools in the middle decades of the 20th century, "envisaged and celebrated a view of the child as a self-directed individual capable and free to exercise choice and occasionally to choose to access some available space and time to concentrate, think, consider and even dream" (Burke, 2016, p. 193). Beginner readers in the English primary school currently have

very little agency to choose where they read and the provision of quiet spaces is minimal. However, this can be changed. Even the provision of a single reading nook in a Year One classroom could allow beginner readers a space where they could "concentrate, think, consider and even dream", a space where movement is not restricted and where books can be shared and enjoyed in relative seclusion.

Prestigious library buildings around the world reflect a belief that expert readers and scholars have earned the luxury of a library in which they can read, reflect and dream and, indeed, the imagination is still understood to be an active component of academic life. By paying more attention to the design of reading spaces for beginner, unconfident and reluctant readers, it may be that these young readers could be persuaded that reading is a pleasurable experience rather than a painful one. Reading nooks and crannies, whether designed into the school or provided for schools as discrete pieces of furniture could change the current paradigm of poor design for beginner readers. These interventions could encourage architects and designers, policy-makers and teaching staff to recognize that reading in the first years of a formal education is an activity that demands physical comfort, freedom of movement and the opportunity for quiet and for seclusion.

Figure 6.1: Images of the nook

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Appendix A: Design brief for the nook, February 2014

A summary

A quiet, protected, desirable space where children can read and talk with an adult or by themselves without being overheard.

The problem

Whole-class teaching of reading (primarily phonics-based) does not address the needs of the whole class. Thirty children sitting on the carpet for a daily 20-minute lesson may not all be able to see or hear the teacher. They will not all learn at a uniform rate. Or remember how to apply what they have learned to the decoding of books. Struggling readers receive the same whole-class tuition as their age-grouped peers. Research has demonstrated that on average the phonic approach works well with 7 out of 10 children. In a class of 30, how do those who cannot learn from phonics progress?

Children can be taken out of class for interventions in literacy in groups of 6 or 1:1 with an adult. Intervention spaces in schools are often unsuitable for teaching reading and may be in exposed corridors or near the toilets. They are often uncomfortable and easily overlooked and overheard by passing adults and children. Reading is a skill to be acquired and demands a degree of risk-taking and a level of confidence. Readers who struggle to learn quickly are often characterised by a lack of resilience and low self-esteem in literacy, rather than a lack of skill. They may benefit from a more private learning space with an adult or child teacher, where this lack of confidence can be directly addressed and 'mistakes' can be made without others watching.

Reading aloud is a necessary component of a reading lesson. It is important that readers who are not progressing can be heard reading aloud so that they can be given strategies to help them learn and practise. Being taken out of the class can be a positive or negative experience for a child. The quality of the experience may depend on where they learn (there is no current research around this question). It may also be a negative experience for a child

to read aloud in a space at the back of the classroom with an adult, while her/his peers listen and watch. The experience can be distracting for the other children or for the child reading, depending on the activity in the rest of the class. Children who learn to read outside the classroom in an intervention space often struggle to demonstrate and replicate this skill in the classroom in front of their teacher. The teacher may doubt their abilities because they have not seen the child reading fluently elsewhere. The child may be inhibited when reading in the classroom, as they have had negative experiences of reading there previously.

Performance specifications

Dimensions	Large enough for two adult-sized seats for comfortable reading. Can be of adult height. Wheelchair access possible? Aimed primarily at beginner readers in KS1 (age 5-7) but may also be suitable for readers up to Year 6, who may be close to adult size.
Scale	Although it is important that adults don't hurt their backs in a half-hour long reading session, child-friendly scale is a priority, so that there is a sense of a private, even hidden-place.
Temperature	Good air flow, no hotter or cooler than a classroom, a constant comfortable temperature would be preferable.
Acoustics	Soundproof, or at least well-muffled, so that reading and speech cannot be heard (easily discerned) from the outside and loud sounds from the classroom/corridors do not distract within.
Materials	Den-like natural materials? Netting? Softness for seating? Glass for visibility? Open to discussion and design.
Decoration	Stylish, a desirable space to enter, not too overwhelming, comforting. May have children's literature or book references in design.
Lighting	Bright enough lighting to read comfortably, but not necessarily overhead or dazzling. May add a special atmosphere

Furniture	Comfortable seating in chairs or on the floor. Some way of holding books – a tray/table, while adult and child read the same book together. Doesn't need storage shelves, seating could contain some storage. Items can be brought into the pod each time. Sensory qualities Smell? Could borrow influences from snoezelen for a sense of comfort, delight and fun.
Access	Adults may need to stoop to enter, to emphasize child-like quality of space: tent/igloo/wigwam?
Supervision and visibility	The inhabitants must be visible from the outside, but not necessarily their faces; there could be material giving some privacy, but making it easy to ascertain who is inside. Alleviate distractions from the outside, esp. children keen to see in.
Location	Classroom or corridor, although the latter has issues around monitoring use. No messy or wasted area at the back of the pod. Inspiring or enticing entrance to pod.
Vocabulary	Liminal, doorway, portal, gateway, den, cave, wigwam, igloo, tent, fortress, transitional, a place of transformation, secret, hidden, defendable, treehouse, ladder, nature, slide, height, unreachable, enclosed, safe, through the keyhole, mirror, looking-glass, Tardis, tunnel, burrow, familiarity, threshold, my space, belonging.
Children's Literature influences	Alice in Wonderland; Alice through the Looking glass; Narnia Chronicles, Lileth (George Macdonald); Watership Down; The Hobbit; Tom's Midnight Garden; Anthony Browne's 'The Tunnel'; Where the Wild things are; The Phantom Tollbooth, Mary Poppins.

Notes about context and precedents

"The order of events really is first of all to look at activities, as we've been talking about, looking at activities, then you design the furniture, and there are all different kinds of furniture, obviously you see, and then you design the building afterwards. It's the complete

reverse of the ordinary. First of all, you think of a fixed building, and you've got to fix everything else inside it, and the teachers are hamstrung. You start with activities, then use the furniture, then you do the building itself, and you have all different kind of furniture for different activities, not the standard issue, there are lots of different kinds of furniture, for wet and messy, for clean work, for book work and for displays, quite a different vocabulary which we gradually developed." David Medd in conversation with Judith and George Baines, cited in Burke, C. (2010)

"…the Medds' belief in the importance of designing schools from the inside out, that is, starting from the observable educational needs of the children and teachers and designing from that starting point." Burke & Grosvenor, *School* (London: Reaktion Books, 2008)

"Children who came to the welfare room were positioned perhaps differently than they were in a classroom. Here was a more blurred boundary between pupil and adult. This was an environment where adults asked for help from children with the preparing of resources … This room appeared to be somewhere in the school where children could be in-between, where it was acceptable not to feel 'a hundred percent'. There was a recognition of physical and emotional well-being in keeping with the reality of children's lives … The physical separateness of the space was significant. Was this room home or school?"
Alison Clark: History of Education Journal 'In between' spaces in postwar primary schools: a micro-study of a 'welfare room' (1977-1993)

"The storecupboard was (unsurprisingly) not a place pupils usually inhabited. It therefore provided an alternative space in contrast to the previous classroom location. The storecupboard had a positive impact on the research process, facilitating a different type of knowledge than was obtainable through interviews in a classroom context. The storecupboard represented a liminal space, in-between the formal and informal worlds of the school talked about by Valentine (2000). In this way, drawing on Bhabha, it represented 'neither One or the other, but something else besides, in-between … a 'thirdspace … The physical and social aspects of the storecupboard contributed meaningfully to the interviews held there. Interactions in the storecupboard became relaxed affairs; the narrowness of the

cupboard meant that only two chairs could be placed next to each other, however, as friendship groups were interviewed, it meant that three or even four pupils would have to sit along the two chairs … (it) was a place that teenagers did not mind being located in; in fact they enjoyed it, seemingly considering it a fun place…. Through the co-construction of the storecupboard as a 'different' type of space by both myself and the participants, it succeeded in contesting and transforming the normative practices and performances usually associated with a school context'." (interviews for research were done in a store cupboard)

Katie Jones, Children's Geographies, August 2008: 'It's well good sitting in the store cupboard just talking about what we do'

Timetable for a Year One child who does not receive additional reading tuition.

Location: an East London state primary school (2013)

Time	Location	Activity
8.50	Playground	Playing/chatting
9.00-9.10	Classroom, carpet space	Registration
9.10-9.15	School office	Delivering register
9.15-9.40	Classroom, carpet space	Literacy lesson input by teacher
9.40-10.10	Classroom, designated table	Writing a story
10.10-1035	Hall, sitting on the floor	Whole school assembly
1035-1045	Playground	Playtime and fruit
1045-1100	Classroom, carpet space	Circle time
1100-1105	Classroom, carpet space	Fit and five exercise programme
1105-1125	Classroom, carpet space	Maths lesson input by teacher
1155-1220	Classroom, designated table	Maths activity
1220-1240	Dining hall	Queueing for and then eating lunch
1240-1300	Playground	Playing
1300-1310	Classroom, carpet space	Registration

1310-1315	School office	Delivering register
1315-1335	Classroom, carpet space	Phonics lesson
1335-1400	Classroom, designated table	Guided reading
1400-1420	Classroom, carpet space	Science input by teacher
1420-1450	Classroom, designated table	Science activity
1450-1500	Playground	Playing
1500-1520	Classroom, carpet space	Storytime
1520-1530	Classroom and cloakroom	Preparations for going home and collection from classroom door by parents.

Appendix B: A summary of data generated

Notes

Eligibility for Free School Meals (eFSM) has been widely used to indicate may be viewed as an indicator of poverty. According to Taylor, "in terms of assessing the reliability of eFSM as a measure of socio-economic disadvantage, this simple binary measure is a very good indicator" (2018, p.46).

English as an Additional Language (EAL) statistics refer to the percentage of children in each of these schools whose first language was not
English.

School	Participant Type	Number	Research method	Types of data generated
School: P **Date of visit:** 21-22 April 2015 **Date of building:** 1887 **Description:** one and a half-form entry inner London primary school **EAL:** 68% **eFSM:** 35%	Children Teaching staff	28 3	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in one Year One classroom, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	2	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	2	Staff-led walking tour of whole school	Field journal notes

School	Participant Type	Number	Research method	Types of data generated
School: F **Date of visit:** 12-13 May 2015 **Date of building:** 1887 **Description:** two-form entry Hampshire county primary school **EAL:** 31% **eFSM:** 7%	Children Teaching staff	29 4	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in two Year One classrooms, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	3	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	1	Staff-led walking tour of whole school	Field journal notes

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School	Participant Type	Number	Research method	Types of data generated
School: O **Date of visit:** 2-3 June 2015 **Date of building:** 1896 **Description:** two-form entry inner-London primary school **EAL:** 97% **eFSM:** 56%	Children Teaching staff	30 1	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in one Year One classroom, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	1	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	1	Staff-led walking tour of whole school	Field journal notes

School	Participant Type	Number	Research method	Types of data generated
School: T **Date of visit:** 10-11 June 2015 **Date of building:** 1950 **Description:** two-form entry outer-London infants school **EAL:** 59.9% **eFSM:** 14%	Children Teaching staff	30 2	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in one Year One classroom, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	2	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	1	Staff-led walking tour of whole school	Field journal notes

School	Participant Type	Number	Research method	Types of data generated
School: Q **Date of visit:** 7-8 July 2015 **Date of building:** 1913 **Description:** two-form entry outer-London primary school **EAL:** 17% **eFSM:** 3%	Children Teaching staff	30 2	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in one Year One classroom, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	2	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	1	Staff-led walking tour of whole school	Field journal notes

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School	Participant Type	Number	Research method	Types of data generated
School: S **Date of visit:** 10-11 June 2015 **Date of building:** 2012 **Description:** three-form entry outer-London primary school **EAL:** 90% **eFSM:** 43%	Children Teaching staff	31 1	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in one Year One classroom, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	1	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	2	Staff-led walking tour of whole school	Field journal notes

School	Participant Type	Number	Research method	Types of data generated
School: H **Date of visit:** 16-17 July 2015 **Date of building:** 1913 **Description:** two-form entry outer-London primary school **EAL:** 56% **eFSM:** 11%	Children Teaching staff	26 2	Observation	Field journal (written notes about classroom activities, routines and comments by children and teaching staff in one Year One classroom, drawn plans and measurements of classroom and reading spaces beyond the classroom). Images taken by me (on digital camera)
	Children	6	Child-led walking tour of reading spaces Stimulated recall of tour	Child-generated images (on i-pad), written notes Field journal (written notes of comments by children)
	Teaching staff	1	Interview and ad-hoc conversations	Audio recordings; notes in field journal
	Senior staff	1	Staff-led walking tour of whole school	Field journal notes

Appendix C: Letter of consent

Dear parent/guardian

My name is Emma Dyer and I am a PhD student at the Faculty of Education, University of Cambridge. I am researching the spaces where readers read inside the school building.

I am writing to request permission to conduct research with your son or daughter, who is in the class that is participating in this project.

My research with your child would consist of one task, to take me on a tour of the school to show me the different locations where they read and to photograph these locations. Children in your son/daughter's class will be asked if they would like to take part in the project and will only selected if they clearly indicate that they are happy to do so. The purpose of the research will be explained to them in advance by their class teacher. Even if they choose to take part, they may withdraw from the project at any time.

Children will be invited to use an iPad for the photography element of the tour. Anonymity will be guaranteed for all children and no images will be stored or reproduced in which children can be identified. The names of children, members of staff and the school will be anonymized to ensure confidentiality.

My research will be shared with my supervisor at the University of Cambridge and with the examiners of my PhD thesis.

Yours faithfully

Emma Dyer

Consent:

…………………………………….   …………………………………….   ………………………

Name (Print)   Signature   Date

Appendix D: The subsequent nook research project

In the second year of my research, 2015, I began to search for funding so that a prototype nook could be built and installed in a primary school classroom. I had hoped that this would happen in time for research about children's responses to the nook to be included in this thesis. Unfortunately, finding sponsorship to build the nook took nearly a year and even once it had been secured, the opening of the first of the two new-build schools that had agreed to be involved in the research project was delayed by problems with their new building for nearly a term.

Both schools took part in the research project between January 2017 and July 2017. Photographs of the nook installed in the two classrooms are annotated in sections 4.3.2 – 4.3.5 and compiled in figure 6.1.