2ND EDITION

Learning Theories in Childhood

COLETTE GRAY AND SEAN MACBLAIN

companion website

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Learning Theories in Childhood

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For my family.

Sean MacBlain:
For my brother Brian.

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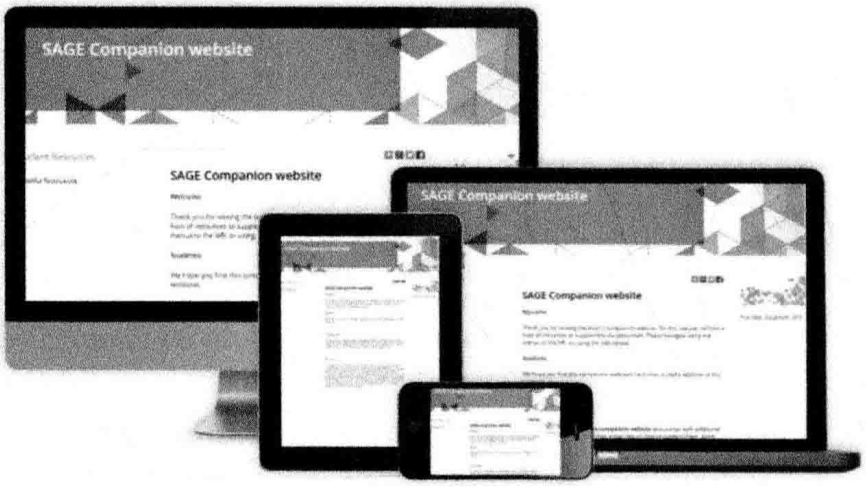

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ABOUT THE AUTHORS

Dr Colette Gray is a Chartered Developmental Psychologist at Stranmillis University College, a College of Queen's University Belfast. She is a Principal Lecturer working with students on the BA (Hons) Early Childhood Studies degree and MA and MEd pathways. Until very recently she was Head of Research Development and a Visiting Professor (Child Development & Education) to the University of St Mark & St John Plymouth. Editor of the *International Journal of Early Years Education*, she continues to develop her research interests with young children and marginalized groups. She co-chairs the participatory research special interest group at EECERA that seeks to give children a voice in matters that affect their lives. With Pascal and Bertram she was a key architect in the production of the first ethical guidelines for practitioners working with children and vulnerable groups (EECERA, 2014). Married to Norman, she is a proud mother and grandmother.

Dr Sean MacBlain is Reader in Child Development and Disability at the University of St Mark and St John. Before taking up his current position Sean worked as a Senior Lecturer in Education and Developmental Psychology at Stranmillis University College, a College of Queen's University Belfast. Prior to working as an academic, Sean worked as an educational psychologist in Belfast and Somerset, and continues in this field in his own private practice, SMB Associates SW LTD (enquiries@seanmacblain.com). Sean's research interests include the professional development of teachers and Early Years practitioners and the social and emotional development of children and young people with special educational needs and disabilities. Sean is married to Angela and lives in Somerset, England.

FOREWORD

Learning is complex, multifaceted and informed by factors within and without our control. The development of the cognitive architecture [e.g. memory, attention, information processing and intelligence] necessary to support learning begins within three weeks of conception. More than ten years ago Bjorklund, Lindahl and Plug (2005) found evidence that a poor prenatal environment can lead to poor social, educational and physical outcomes in later life. Similar conclusions were drawn by Ludwig and Currie (2010), who note the long-term negative effects of maternal smoking and drinking on the foetus. Smoking is also correlated with low birth weight. Seemingly innocuous, the importance of low birth weight was noted in a Norweigan study by Black et al. (2007). Linking birth data to adult education, earnings and IQ, they concluded that a 10 per cent increase in birth weight may increase future earnings, the probability of finishing secondary school, and IQ by approximately 1 per cent.

Whilst it is beyond our gift to change the child's prenatal experience, in partnership with parents and external agencies, we can level the playing field by providing every child with an enriched early years experience. Compelling evidence suggests that a quality learning experience requires a well-qualified workforce, who are skilled and knowledgeable (Nutbrown, 2012; EYFS Statutory framework, 2014).

This book seeks to develop your knowledge and understanding of children's learning. The first edition, published in 2012, was the result of our frustration with the lack of a suitable text for students which addressed pertinent learning theories (including Pavlov, Skinner, Piaget, Vygotsky, Bronfenbrenner and Bruner) and the contribution of philosophers (e.g. Locke, Rousseau, Steiner) to early years education. This led us to write a book with the notion of supporting our own students' learning. We were pleased to note that others found it similarly useful and delighted to reach an international audience; our first edition has been translated into Malay and Chinese.

When SAGE requested a second edition we examined the reviews of the first book and sought information from a range of academics on how it might be improved. This edition is the result of extensive consultation. The book retains the balance between theory and practice but is enhanced by the addition of two new chapters (see Chapters 2 and 11). Several chapters are extended, whilst others are updated to include evidence from neural imaging and international studies that seek to identify the processes underpinning children's learning. The recommended

reading list at the end of each chapter is updated and has been carefully chosen from the literature in the field to enhance your knowledge and understanding of the issues discussed in the chapter. On the Companion Website for the new edition, you will find a selection of SAGE journal articles relevant to each chapter, which can all be viewed in open access (these are also listed at the end of each chapter). Additionally, YouTube clips popular with our students are included in the chapters and listed on the book's Companion Website to allow you to view visual examples of children's learning. Podcasts for each chapter are also available on the Companion Website for the new edition, to offer insight into our thinking. Importantly, however, from the inception of the first edition through to this latest effort, we remain committed to the belief that no single theory can fully explain children's learning. Instead elements of most theories are frequently seen at work, and there remains much to discover. To test your knowledge of theory and gain an insight into your preferred learning style complete the exercises included in Chapter 2. Then consider how pedagogy can be modified to meet the learning styles of the children in your setting.

Your journey of discovery will be well advanced if, at the end of the book, you find that opinions of learning are influenced by a multitude of factors including the theoretical lens utilized to examine specific forms of behaviour. Viewed simply and without consideration for the multiple factors that impact learning, explanations may be simplistic, unsubstantiated and devoid of the richness and complexity that truly reflects the *how, why* and *when* of learning. In the final analysis, we hope your investigations provoke more questions than answers. As Confucius so wisely noted:

To know what you know and what you do not know, that is true knowledge.

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1 AN INTRODUCTION TO LEARNING THEORIES

This chapter aims to:

- familiarize the reader with the organization and structure of the book
- provide a brief synopsis of each chapter.

More than thirty years ago, seminal studies conducted by DeCasper and Fifer (1980) and Hepper (1996) offered the first tangible proof that learning precedes birth. From the third tremester, DeCasper and Fifer had mothers read aloud the Dr Seuss story *The Cat in the Hat* at regular intervals before birth. Immediately after birth, they exposed babies to a nonneutritive nipple. Sucking on the nipple activated a recording of the story read by the baby's mother or another female. In all instances, babies suckled harder and faster to hear their mother's voice. Hepper's (1996) relaxation study revealed that babies could make associations prior to birth (see Gray and MacBlain, 2012). More recently, Moon et al. (2012) identified 30 weeks (a time when the sensory and brain mechanisms for hearing are intact) as a critical period for learning. Their research suggests that exposure to complex sounds 10 weeks prior to birth can be learned and remembered up to six months after birth.

These findings and evidence from non-invasive brain imaging studies provide important insights into the course of cognitive development. For example, synaptic formation, necessary for the development of complex neural connections, occurs in the first years of life, whereas the central cortex, which plays a key role in memory, attention, perceptual awareness, thought and language, continues to develop throughout adolescence and early adulthood (Stiles and Jernigan, 2010). Experience and the environment are also central to brain development (Robson, 2012). Greenough et al. (1987) coined the terms *'experience-expectant'* and *'experience-dependent'*. The former refers to the critical role of experience in brain development during the

early post-natal stage of life. The latter captures the essential role of learning in neural development. It is argued that an enriched learning environment can have a dramatic effect on the complexity and functioning of the developing brain (Stiles and Jernigan, 2010).

Some learning is incidental, effortless and undirected, whilst other learning is effortful, purposeful, directed, creative and reflective. For example, you might settle down to show a toddler how Lego Duplo® bricks fit together (directed learning) but find their attention drawn to an activity at the writing table (incidental learning). By the end of the session, the child might report the sounding out words used in the writing activity, 'S is a snake, a slithering snake', but have no clue about putting Lego Duplo bricks together. This situation reflects the sheer complexity of human learning. It also highlights how distraction can degrade learning. Indeed, the negative effect of situational factors such as visual displays, noise and lighting have on young children's learning is the theme of a provocation provided by *Teachers TV – A positive learning environment* (see Chapter 2).

Evidence suggests that early experiences are generally forgotten (for a discussion of childhood amnesia, see Hamilton, 2014; Bauer, 2013). This is attributed to the overwhelming amount of information young children encounter in their early life. Whilst seminal events may be remembered, holidays, visits to theme parks and so on may be forgotten. In contrast, skills acquired in early childhood such as walking, talking, riding a bike, reading and writing are typically retained. Simply stated, learning acquired through experience involves the acquisition of knowledge and skills (David et al., 2011).

For more than 2,000 years, philosophers, academics and educators have attempted to explain and define human learning. The Greek philosopher Aristotle (384–322 BC) believed that learning develops through repetitive exercises. According to Aristotle, the State must be charged with responsibility for instilling virtue, habits, nature and reason into children and for ensuring that they became citizens of benefit to society. Almost a hundred years later, Socrates (470–399 BC) described learning as a process of remembering. He believed that all knowledge exists within the human soul before birth but, perhaps due to the trauma of birth, the soul forgets all it previously knew. Through a process of questioning and inquiry, termed '*Socratic dialogue*', the soul recovers some aspects of knowledge.

Definition

Learning: the acquisition of knowledge or skill.

In contrast, Locke (1632–1704) argued against the existence of innate ideas (formed before birth), describing the child's mind as a *tabula rasa* or blank slate. Consistent with Aristotelian philosophy, Locke believed that knowledge is acquired through experience, repetition, training and virtue. He emphasized the importance of enjoyable learning and insisted that teaching should begin in early childhood. Locke's assertions were radical for their time but were shared by a number of influential thinkers including, among many others, Pestalozzi (1746–1827), Froebel (1782–1852), Dewey (1859–1952) and Montessori (1870–1952). Whilst each offers a unique insight into children's learning, importantly for our discussion these philosophers and educators have a shared belief in the importance of educating the young child.

Rousseau (1712–78), for example, argued that education should follow the child's natural growth rather than the demands of society. His emphasis on the innate development of human nature became the primary philosophical basis for many alternative movements in education. In the early 1800s, the Swiss humanitarian Pestalozzi opened schools for orphans, based on Rousseau's principles. His work inspired educators in Europe and America. Froebel, a teacher at Pestalozzi's school, later became famous as the founder of the kindergarten concept. Montessori shared Froebel's belief that children should be taught social skills and empathy. While Froebel used creative and imaginative play to achieve his goals, Montessori employed real-world experiences such as cleaning a room, caring for animals, building a toy house or making a garden to develop these skills.

Dewey shared with Montessori and Froebel the notion that education should be child-centred, active and interactive, and that education must involve the child's social world and community. Influenced by the teaching philosophies of the early pioneers in the field of early childhood education, Dewey emphasized the importance of experiential learning and the process of teachers and children learning together. The teachings of the founding fathers and mothers of early childhood education are explored in greater detail in Chapter 3 where their unique contributions are highlighted. Similarly, the topic of experiential learning is given a more thorough analysis in Chapters 5 and 6 where we explore the theories of Piaget (1896–1980) and Vygotsky (1896–1934).

It is, however, theories of learning that form the central foci of this book. The last century witnessed a significant shift away from philosophical propositions to the development of a range of empirical theories of learning; each claims to explain the origins of some aspect of learning. Before considering influential educational theories of learning, in Chapter 2 we believe it is important to define the term *'theory'* and to explore the differences between a theory and a philosophy.