

SECOND EDITION

# THE EFFECTIVE TEACHER'S GUIDE TO SENSORY AND PHYSICAL IMPAIRMENTS

Sensory, orthopaedic, motor and  
health impairments and traumatic  
brain injury



MICHAEL FARRELL

ROUTLEDGE  


# The Effective Teacher's Guide to Sensory and Physical Impairments

Sensory, orthopaedic,  
motor and health impairments  
and traumatic brain injury

Second edition

Michael Farrell



 **Routledge**  
Taylor & Francis Group  
LONDON AND NEW YORK

First edition published as *The Effective Teacher's Guide to Sensory Impairment and Physical Disability: Practical strategies*, 2006 by Routledge

This second edition published 2011

by Routledge

2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Simultaneously published in the USA and Canada

by Routledge

270 Madison Avenue, New York, NY 10016

*Routledge is an imprint of the Taylor & Francis Group, an informa business*

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Typeset in Baskerville by

Swales & Willis Ltd, Exeter, Devon

Printed and bound in Great Britain by

CPI Antony Rowe, Chippenham, Wiltshire

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*British Library Cataloguing in Publication Data*

A catalogue record for this book is available from the British Library

*Library of Congress Cataloging-in-Publication Data*

Farrell, Michael, 1948–

The effective teacher's guide to sensory and physical impairments : sensory, orthopaedic, motor and health impairments and traumatic brain injury / Michael Farrell. – 2nd ed.

p. cm. – (Effective teacher's guides series)

Includes bibliographical references and index.

1. Children with disabilities—Education. I. Title. II. Title: Guide to sensory and physical impairments.

LC4015.F368 2011

371.91—dc22

2010027110

ISBN13: 978-0-415-56567-7 (hbk)

ISBN13: 978-0-415-56565-3 (pbk)

ISBN13: 978-0-203-83431-2 (ebk)

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# The Effective Teacher's Guide to Sensory and Physical Impairments

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'Michael Farrell offers well sourced overviews of the conflicting and contradictory advice that is available to schools, suggests a variety of solutions to challenges, empowering the reader to make their own choices . . .' Carol Smart, *Special Needs Information Press*

Fully updated with the latest research and advice on best practice, this new edition of *The Effective Teacher's Guide to Sensory and Physical Impairments* covers a range of conditions that cause learning difficulties for children, including visual impairment, hearing impairment, deafblindness, orthopaedic impairment, motor disorders and health impairments, as well as providing a brand new chapter on traumatic brain injury.

Teachers are likely to meet children with varying types and degrees of sensory and physical impairments. This comprehensive guide equips you with informed and practical strategies to ensure that all pupils are included and provided for in the best possible way. The new edition has also been adapted to be more widely relevant to readers in different countries, focusing more on the strategies that work regardless of national context.

Writing in his popular accessible style, Michael Farrell suggests the best ways of dealing with a variety of conditions, always with practical classroom situations in mind. In each section, the book:

- explains the legal contexts
- looks at the range of provision
- suggests intervention and support strategies
- gives points for reflection and suggested further reading.

Highly accessible and authoritative, this book provides teachers with an invaluable resource to help you create a truly inclusive classroom.

**Michael Farrell** is a special education consultant working with schools, local authorities, voluntary organisations, universities and others in Britain and abroad. He has published extensively in this field.

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**The Effective Teacher's Guides series,  
all by Michael Farrell**

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*The Effective Teacher's Guide to Behavioural and Emotional Disorders: Disruptive Behaviour Disorders, Anxiety Disorders, Depressive Disorders and Attention Deficit Hyperactivity Disorder (2nd edition)*

*The Effective Teacher's Guide to Sensory and Physical Impairments: Sensory, Orthopaedic, Motor and Health Impairments and Traumatic Brain Injury (2nd edition)*

*The Effective Teacher's Guide to Autism and Communication Difficulties: Practical Strategies*

*The Effective Teacher's Guide to Dyslexia and other Specific Learning Difficulties: Practical Strategies*

*The Effective Teacher's Guide to Moderate, Severe and Profound Learning Difficulties: Practical Strategies*

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## About the author

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Michael Farrell was educated in the United Kingdom. After training as a teacher at Bishop Grosseteste College, Lincoln, and obtaining an honours degree from Nottingham University, he gained a Masters Degree in Education and Psychology from the Institute of Education, London University. Subsequently, he carried out research for a Master of Philosophy degree at the Institute of Psychiatry, Maudsley Hospital, London, and for a Doctor of Philosophy degree under the auspices of the Medical Research Council Cognitive Development Unit and London University.

Professionally, Michael Farrell worked as a headteacher, a lecturer at London University and as a local authority inspector. He managed a national psychometric project for City University, London, and directed a national initial teacher-training project for the United Kingdom Government Department of Education. His present role as a private special education consultant includes work with children and families, schools, local authorities, voluntary organisations, universities, and government ministries.

His many books, translated into European and Asian languages, include:

- *Educating Special Children: An introduction to provision for pupils with disabilities and disorders* (Routledge, 2008)
- *Foundations of Special Education: An Introduction* (Wiley, 2009)
- *The Special Education Handbook* (4th edition) (David Fulton, 2009).

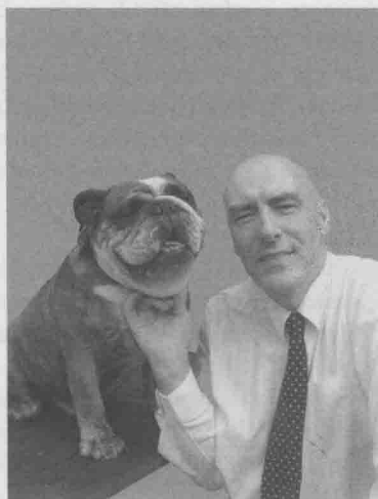
# Preface

I am of course extremely pleased to be writing the preface to the second edition of this book, *The Effective Teacher's Guide to Sensory and Physical Impairments: Sensory, Orthopaedic, Motor and Health Impairments and Traumatic Brain Injury*.

It was previously called *The Effective Teacher's Guide to Sensory Impairment and Physical Disability: Practical Strategies*, published in 2006. The first edition attracted favourable comment and I have listened to the views of readers about how the edition might be improved.

I hope it continues to be useful and I again welcome comments from readers to ensure any future editions are as informative and helpful as possible.

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September 2010  
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# What are sensory and physical impairments?

### Introduction

This chapter sets the book in the context of 'The Effective Teacher's Guides' series of which it forms a part, and explains the features of the new edition of this title. I outline the types of sensory and physical impairments with which the book is concerned and outline the content of subsequent chapters. The chapter also suggests potential readers likely to find the book useful.

### 'The Effective Teacher's Guides' series

'The Effective Teacher's Guides' series, published by Routledge, concerns different types of disabilities and disorders. These include cognitive impairment ('learning difficulties' in the United Kingdom and 'mental retardation' in the United States of America), autism, emotional and behavioural disorders, reading disorder/ dyslexia and others. Each book in the series describes practical strategies that enable the educational progress and personal and social development of pupils with particular disabilities and disorders.

The titles are:

- *The Effective Teacher's Guide to Sensory and Physical Impairments: Sensory, Orthopaedic, Motor and Health Impairments and Traumatic Brain Injury* (2nd edition)
- *The Effective Teacher's Guide to Behavioural and Emotional Disorders: Disruptive Behaviour Disorders, Anxiety Disorders, Depressive Disorders and Attention Deficit Hyperactivity Disorder* (2nd edition)
- *The Effective Teacher's Guide to Autism and Communication Difficulties: Practical strategies*

## 2 What are sensory and physical impairments?

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- *The Effective Teacher's Guide to Dyslexia and Other Specific Learning Difficulties: Practical strategies*
- *The Effective Teacher's Guide to Moderate, Severe and Profound Learning Difficulties: Practical strategies*

### **The new edition**

This book, *The Effective Teacher's Guide to Sensory and Physical Impairments: Sensory, Orthopaedic, Motor and Health Impairments and Traumatic Brain Injury*, is the second edition of a book previously called *The Effective Guide to Sensory Impairment and Physical Disability: Practical Strategies*, published in 2006.

The first edition was generously reviewed and well received by readers. This new edition is different in two main ways. First, it seeks to make the content more widely accessible to readers in different countries. The 2006 edition was set within the context of legislation and procedures in the UK. The new edition focuses more on strategies that work without undue reference to a particular national context. Second, the new edition has a wider remit, as the longer title suggests. The three chapters on visual impairment, hearing impairment, and deafblindness have been retained. The former single chapter on 'Physical and motor disability and medical conditions' has extended to three chapters: 'Orthopaedic impairment and motor disorders', 'Health impairments' and 'Traumatic brain injury'.

### **Sensory and physical impairments**

This chapter outlines types of sensory and physical impairments with which the book is concerned. These are derived from classifications used in the UK and the USA. I consider the importance of information received through the senses, then touch on broad observations about related provision.

In the USA, pupils considered to need special education covered by federal law meet two requirements: they have a defined disability, and the disability has an adverse educational impact. Categories of disability under federal law as amended in 1997 (20 United States Code 1402, 1997) are reflected in 'designated disability codes' including the following:

- 02 Hard-of-hearing
- 03 Deaf
- 05 Visually Handicapped

- 07 Orthopaedically Impaired
- 08 Other Health Impaired
- 12 Deaf/Blind
- 13 Traumatic Brain Injury

In England, a similar classification (Department for Education and Skills, 2005, *passim*) includes:

- Visual impairment
- Hearing impairment
- Multi-sensory impairment
- Physical disability.

The contents of this book reflect aspects of classifications such as those used in the USA and England. Table 1 gives equivalents of disorders and disabilities as they:

- are delineated in the present text
- might be categorised in the UK
- might be categorised in the USA.

Table 1 Broadly comparative terms

<b>Text:</b> Hearing impairment	
<b>UK:</b> Hearing impairment	
<b>USA:</b> Hard-of-hearing/Deaf	
<b>Text:</b> Visual impairment	
<b>UK:</b> Visual impairment	
<b>USA:</b> Visually Handicapped	
<b>Text:</b> Deafblindness	
<b>UK:</b> Multi-sensory impairment	
<b>USA:</b> Deaf/Blind	
<b>Text:</b> Orthopaedic impairment and motor disorder	
<b>UK:</b> Physical disability	
<b>USA:</b> Orthopaedically Impaired	
<b>Text:</b> Health impairment	
<b>UK:</b> Physical disability	
<b>USA:</b> Other Health Impaired	
<b>Text:</b> Traumatic brain injury	
<b>UK:</b> No specific category	
<b>USA:</b> Traumatic brain injury	

### **Information received through the senses**

Even a brief outline of the information that is received through the senses can indicate how much is taken for granted when the senses are unimpaired. The sense of touch gives information on such qualities as hardness and softness, texture, shape, pliability, weight, hollowness or solidity, and atmosphere (dry, steamy, cold, warm).

The sense of smell provides information helping one to recognise such materials and items as leather, wood, metal, paint, flowers, and, more generally, whether the smell is acrid or sweet. Taste includes information on saltiness, sweetness and sourness.

The so-called 'distance senses' of sight and hearing also provide a wealth of information. Sight indicates colour, tone, contrast, perspective, depth, size, shape, opaqueness or transparency, reflection, light intensity and duration and enables the use of television, visual print, photographs and so on. Hearing gives information relating to pitch, volume and timbre, allowing one to recognise such phenomena as the human voice, the rustling of grass, household and school sounds, traffic, music, animal sounds and the sea.

Proprioceptive sense conveys information about body position and the position of the limbs and head, muscle position, direction, balance, movement, stillness, weight, acceleration and deceleration.

### **Provision for pupils with sensory impairments and physical disabilities**

Later chapters of the book separately explore provision for learners with visual impairment, hearing impairment, deafblindness, orthopaedic impairments and motor disorders, health impairments, and traumatic brain injury. This chapter indicates something more about the nature of sensory impairments and physical disabilities by touching on the interventions that are used when educating learners with sensory impairment and physical disabilities.

The *Special Educational Needs Code of Practice* (Department for Education and Skills, 2001) is a document published in the UK mainly providing guidance on processes of identification and assessment of children with disabilities and disorders. As a starting point, it provides a basic description of provision from which learners with sensory impairments and physical disabilities might benefit. These learners require some or all of the following (Department for Education and Skills, 2001, 7: 62):

- appropriate seating, acoustic conditioning and lighting
- adaptations to the physical environment of the school
- adaptations to school policies and procedures
- access to alternative or augmented forms of communication
- provision of tactile and kinaesthetic materials
- access to different amplification systems
- access to low vision aids
- access in all areas of the curriculum through specialist aids, equipment or furniture
- regular and frequent access to specialist support.

## **Subsequent chapters**

### ***Subsequent chapters concern the following topics:***

- Chapter 2: Visual impairment
- Chapter 3: Hearing impairment
- Chapter 4: Deafblindness
- Chapter 5: Orthopaedic impairment and motor disorders
- Chapter 6: Health impairments
- Chapter 7: Traumatic brain injury
- Chapter 8: Conclusion

Each chapter defines the area or condition being considered. It examines prevalence, causal factors, and identification and assessment. The chapter then considers the condition or topic in relation to elements of provision: the curriculum and assessment, pedagogy, resources, therapy and care, and school and classroom organisation.

The book includes a bibliography and a combined subject and author index.

## **Proposed readers**

As part of 'The Effective Teacher's Guides' series, readers of this book will include teachers and student teachers in mainstream schools, special schools, and other settings. However, I hope that parents and non-teaching professionals with a role or an interest in provision for children and young people with sensory and physical impairments will also find the book helpful.

### Further reading

Farrell, M. (2009b) (4th edition) *The Special Education Handbook*, London, David Fulton

This book provides entries on a range of topics covering: special education issues and terms, disciplines associated with special education, venues relating to special education and school organisation, roles and responsibilities, individual differences among learners with disabilities and disorders, curriculum and assessment, resources and technology, pedagogy and classroom organisation, and therapy and care. It includes entries specific to sensory and physical impairments, including: visual impairment, hearing impairment, deafblindness, health impairment, orthopaedic impairment and motor disorders, and traumatic brain injury.

Kauffman, J. M. and Hallahan, D. P. (2005) *Special Education: What It Is and Why We Need It*, Boston, MA, Pearson/Allyn and Bacon

This introductory but well-argued book sets out the case for special education and explains some of its main features.

Reynolds, C. R. and Fletcher-Janzen, E. (eds) (2004) (2nd edition) *Concise Encyclopaedia of Special Education: A Reference for the Education of Handicapped and Other Exceptional Children and Adults*, Hoboken, NY, John Wiley and Sons

This reference work includes reviews of assessment instruments, biographies, teaching approaches, and overviews of learning disabilities.

# Visual impairment

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### Introduction

This chapter firstly defines visual impairment (as well as blindness and low vision) and outlines some developmental implications. It looks at prevalence. Causal factors are examined in relation to various factors: genetic, those arising in foetal development, those emerging during the birth process, and factors occurring in childhood. Types of visual impairment are described: refractive errors such as short sightedness, and other types of visual impairment such as cataract. I then consider the identification and assessment of visual impairment with regard to evaluations of vision, for example, a distance vision test, and educational assessments.

The chapter examines provision in terms of the curriculum and assessment; pedagogy; resources; school and classroom organisation; and therapy and care. Among curriculum implications are that suitable aids and approaches are used to enable the student to gain access to the curriculum. These include Braille notation for some students, specially adapted equipment, and opportunities for concrete experience. Arrangements may be made for examination to ensure the student with visual impairment has the opportunity to fully demonstrate his knowledge and understanding. Activities and opportunities that develop independence, including orientation and mobility, form an important part of the curriculum.

Pedagogy may involve the work of a specialist teacher. Tactile and hands on experiences are important. Encouraging listening and speaking includes developing turn-taking skills in conversation using clues from the other person's tone of voice and speaking rhythm. Reading may be taught using tactile methods, especially Braille or Moon. Tactile codes are also used for writing. Personal and social development and leisure include self-help skills being taught in context. Day-to-day items can be chosen or

modified to help with, for example, eating and drinking. Physical fitness can be encouraged and physical activities pursued using adapted or special equipment such as a guide wire system for running. Resources are used to aid access to information. Low vision devices and lighting and computer technology can have an important role. Therapy and care includes provision for any additional difficulties such as speech and language therapy if necessary. School and classroom organisation involves, for example, ensuring the best use is made of auditory cues.

## **Developmental implications of visual impairment**

In this chapter, 'visual impairment' refers to a continuum of loss of sight including blindness unless specified otherwise. 'Blindness' designates a level of sight loss requiring mainly tactile methods of learning. 'Low vision' refers to a level of vision where children's learning and teaching predominantly involves methods relying on sight.

Visual impairment affects social and emotional development, language development, cognitive development and mobility and orientation. The combination of these effects on development influences the child's functioning and learning potential.

In the early years, visual impairment affects a child's overall ability to interact with surroundings, especially if he is born with no sight. Infants with severe visual impairment reach 'milestones' for large and fine motor movement later than sighted infants of the same age (Levizion-Korach *et al.*, 2000). Consequently, the child's educators have to consider carefully implications for encouraging the child's development, well-being and education. In a play setting, a pre-school child who cannot see what other children are doing can be invited to join in and an adult can initially structure and encourage co-operation with the other children.

Before a child with visual impairment starts elementary/primary school, a specialist professional (perhaps a specialist teacher) will usually provide the school with details of assessments of the child's vision and their educational implications. A specially assigned professional will help the child orientate himself in the new school. The teacher and others will ensure the classroom environment is safe and welcoming. Resources such as lighting, tactile displays with Braille labelling, and print resources are used to aid the child's learning.

During adolescence, there are implications for visual impairment and physical, cognitive, social and emotional development. A fully sighted young person can see the physical and sexual changes associated with

adolescence and compare them to similar changes experienced by peers. However, an adolescent with visual impairment cannot see these changes and has to rely mainly on verbal descriptions. At the same time, touching taboos constrain the opportunity to explore bodily changes in others. Challenges requiring support and practical guidance also arise in transitions to adulthood, in higher education and in preparing for and pursuing a career.

## Prevalence

Studies of childhood vision impairment carried out between the years 1988 and 2000 show prevalence rates ranging from 3.0 to 18.1 per 10,000. These wide variations may relate to differences in the way visual impairment was defined, the exact age range considered, and the procedures for ascertaining instances of visual impairment (Mervis and Boyle, 2002). In the USA a population-based study of childhood vision impairment including moderate impairment levels was carried out in metropolitan Atlanta, Georgia. As explained later, moderate visual impairment levels imply the best corrected visual acuity in the better eye is 20/70 or worse. The Atlanta study found a prevalence rate of 10.7 per 10,000 of children aged six to ten years old. Nearly two thirds of these children had co-existing disabilities (Ibid.).

In a report published in 2003, it was estimated that in England 20,870 children up to the age of 16 experienced visual impairment. This suggests a prevalence rate of 2.5 per 10,000 (Keil and Clunies-Ross, 2003, p. 13). Of these children, 30 per cent had additional 'complex needs' including severe learning difficulties/moderate to severe cognitive impairment or profound learning difficulties/profound cognitive impairment. The great majority of pupils with visual impairment who read and write use print, while about four per cent aged 5 to 16 years employ Braille as their main learning medium (Ibid. p.28).

## Causes of visual impairment

Visual impairment may be caused by:

- genetic factors
- factors arising during foetal development
- factors occurring during the birth process
- factors occurring in childhood.