

Attention, Balance, and Coordination: The ABC of Learning Success

S. Goddard Blythe

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Perceptual motor programs are a group of interventions that have been described in the educational literature for over 50 years. Basic to these approaches is the assumption that higher-level learning, reflected in academic skills such as reading, is dependent on the acquisition of basic perceptual and/or motor skills. Further, it is assumed that intervention strategies directed at addressing these underlying skills will result in improvement in higher order skills. Interventions take a variety of forms, typically involving a range of physical activities such as balancing. While perceptual motor approaches have a long history, they are not well accepted as evidence-based practices in education (Hattie, 2009; Hyatt, Stephenson, & Carter, 2009; Kavale & Mattson, 1983; Kavale & Mostert, 2004; Stephenson, Carter, & Wheldall, 2007).

In the book under review, Goddard Blythe outlines the Institute for Neuro-Physiological Psychology (INPP) approach to explaining, assessing and treating learning problems. In this case, the underlying deficit is presumed to be the retention of vestiges of reflexes that are normally present in infancy, and the related inadequate development of reactions that assist in righting of the body and balance. In this example of the perceptual motor genre, these deficits are claimed to not only underlie learning disabilities, but an extraordinarily broad range of problems including attention deficit disorder, a variety of anxiety and panic disorders, depression and bedwetting. Consequently, it is argued that exercises designed to address these underlying neurological deficits will create the preconditions for development of higher order abilities, most particularly academic skills.

The basic premise of the argument is presented in the opening chapter, linking learning and other problems to immaturity in the development of postural reflexes. Evident at this early stage are unsubstantiated and highly speculative claims regarding links between symptoms and purported neurological mechanisms of disorders including dyslexia and attention deficit disorder. Chapter 2 addresses the significance of primitive and postural reflexes. Again, this content is highly speculative and there is often a dearth of reference to supporting scientific evidence. For example, with the thinnest husk of evidence it is claimed that retention of the infant Moro reflex results in an anxious, withdrawn and fearful child and may even compromise immune function.

The next chapters deal with primitive reflexes that are elicited by body position and touch, and subsequently more advanced postural reactions are considered. Initially each reflex or reaction is described in detail and then the role they play in typical and atypical development is discussed. The consideration of the effects of these reflexes and reactions on normal and atypical development range from plausible to extremely speculative, including many highly conjectural suggestions made in the absence of any supporting evidence or with the most flimsy of support. A couple of salient examples will both illustrate this point as well as highlight some of the

consistent logical flaws that permeate the book. Goddard Blythe offers an anecdotal observation that infants often move their feet up and down as if the toes were having a 'conversation' and suggests that children are 'exercising' the Babinski and plantar reflexes (oddly, in the absence of pressure to the foot that normally elicits these reflexes). It is also noted that this excited toe wriggling often precedes sounds. On this basis, it is suggested that these reflexes may be important to the development of vocalisations that are precursors to speech. It appears to be assumed that any movements that resemble primitive reflexes (like toe movements) necessarily involve those reflexes. Further, there is clearly inadequate distinction between correlation and causation. While toe movement may be correlated with vocalisation this does not imply it might facilitate such vocalisations. It is also claimed that athletes recruit some reflexes in performance of complex motor skills. For example, it is argued that a diver uses a reflex called the symmetric tonic neck reflex (involving bending of the arms and straightening of the legs when the neck is bent) when assuming a closed pike position. In the absence of other evidence, voluntary movement by the diver to meet the very prescriptive requirements of the position would seem to offer a more parsimonious explanation. The problem of only considering explanations consistent with an already accepted hypothesis is well illustrated in these examples. It appears that if you are looking for a primitive reflex, you will probably see one.

The next two chapters address the INPP screening questionnaire including administration and detailed explanation of the items. The questionnaire contains a combination of legitimate risk factors for later learning and developmental problems, such as low birthweight, and speculative factors such as infant colic, travel sickness and difficulty riding a bike. The development of vestibular-cerebellar theory is then addressed and discussion is offered of the effects of claimed neurodevelopmental delay in adults and adolescents. This includes discussion of space dyslexia, a purported syndrome where astronauts suffer transient dyslexia after periods of weightlessness due to disruption of the vestibular system. This is interesting given that NASA have not observed this phenomena nor are aware of any evidence of its existence (Stephenson, 2009). 'Development of the INPP Method — from Theory to Fact' is an ambitiously titled chapter that somewhat ironically demonstrates the low standard of evidence that is accepted for the INPP approach. Given the chapter title, a comprehensive dissection of the evidence for and against the INPP approach might be expected. In fact, most of what is described consists of correlational evidence and small-scale studies with limited independent replication. The book is rounded off with a discussion of a range of factors that are viewed as contributing to specific learning difficulties.

In the opening chapter of the book, the author notes that although the role of postural reflexes has been studied for over 30 years, the proposition that they underlie cognitive deficits remains controversial. After finishing the book, a reader without a background in the area would justifiably be perplexed as to why there was any controversy at all. In fact, perceptual motor approaches have been subject to considerable scrutiny on both conceptual and empirical grounds and have been found severely wanting (Hyatt et al., 2009; Kavale & Mostert, 2004). Somewhat remarkably, few, if any, of these criticisms are raised in this book, let alone addressed. In addition, the author uncritically implicitly or explicitly endorses a wide range of kindred perceptual motor and related programs, the evidence for which has been subject to unfavourable scientific review and that sit on the spectrum between unproven and disproven. These include sensory integration therapy (see Arendt, MacLean, & Baumeister, 1988; Hoehn & Baumeister, 1994; Leong & Carter, 2008; Vargas & Camilli, 1999), Irlen lenses (see

Hyatt et al., 2009; Kavale & Mostert, 2004), sound therapies such as AIT and Tomatis (see Dawson & Watling, 2000; Sinha, Silove, Wheeler, & Williams, 2006) and Belgau therapy (see Meyers & Schkade, 1992). Presentation of such therapies within the broad framework of the book is appropriate, but totally ignoring the accumulated evidence (or lack of accumulated evidence) on their efficacy falls well short of a scientific stance. More generally, much of the evidence presented in the book is correlational in nature and rarely are alternative explanations explored. In this light, it is not difficult to see why this approach and related perceptual motor programs have been regarded as, at best, unsubstantiated.

Goddard Blythe does not limit advice to educational issues. While appropriately noting the public health benefits of childhood vaccination, the author then presents the work of Wakefield, without any acknowledgement that this research has been comprehensively disconfirmed (DeStefano, 2007; Miller & Reynolds, 2009). It is also suggested that cranial osteopathy and chiropractic are appropriate treatments for postulated neck discomfort and headache in neonates, claimed to result from birth trauma. Based on information from cranial osteopaths, it is also suggested that thumb sucking can be the child's attempt to 'self-treat' and ameliorate increased intracranial pressure that results from birth trauma. A PubMed search conducted by the reviewer failed to locate any evidence to support this claim. A reader could well be forgiven for questioning whether many ideas are too implausible or unsubstantiated to warrant critical consideration or analysis.

The author of this book is clearly passionate about the topic and has obviously spent many decades aggregating information that is consistent with her case. Unfortunately, the process of science does not involve the accumulation of data and speculation, regardless of how tenuous, which is consistent with a hypothesis while ignoring all inconsistent evidence or criticism. Science demands that evidence be weighted according to its quality and that all evidence be critically considered in attempting to validate or refute a hypothesis. The central lines of argument of this book fall well short of these standards. Ultimately, the book provides little credible and substantive support for the INPP approach or for perceptual motor approaches in general.

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Special Educational Needs: The Key Concepts

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The introduction to this book begins with a statement that it is ‘all about children and young people who are “different”’ (p. xii). This worried me. A major focus of legislation, policy, and practice for students with special educational needs has been a de-emphasis of concepts of difference, and a concentration on the need for schools to provide appropriate educational programs for the wide diversity of students who will attend them. To label some children as ‘different’ appears to me to be returning to a dated approach of defining one group as ‘normal’ and others as outside the norm, requiring special provisions. A more common approach nowadays is to say that schools should provide appropriate programs for all students, all of whom are different from each other in some ways and alike in many others.

The book is about the English concept of special educational needs (SEN), and is clearly targeted at an English readership. All terminology, legislation, policy and examples are from England. For example, reference to the ‘Soham murders’ would mean little to readers outside the United Kingdom. This is not a problem in itself, as there is a large potential readership in England. However, it does limit the book’s usefulness and relevance outside that country.

The book is structured into five chapters: ‘Historical dimensions and current themes’, ‘Definitions and terminology’, ‘Legislation and policy’, ‘Practice and provision’,

and 'Pupils, professionals and parents'. Within each chapter there is coverage of up to 45 topics, with around a page of description on each, followed by a discussion question and a reference.

Extraordinarily, the topics in three of the five chapters are presented in alphabetical order. The chapter on 'Historical dimensions and current themes' has 25 topics beginning with 'ability and attainment' and ending with 'social class'. The 'Practice and provision' chapter starts with 'art therapy' and finishes with 'whole school SEN provision'. As a result, the book has no narrative or logical sequence. There is no consistent theme or developed argument. Instead, there is a series of explanations or brief essays that appear to be unconnected to each other, the only link being the format and the overall topic of SEN.

Because of the brevity of the topic essays, the coverage is often simplistic and superficial, and sometimes inaccurate. The one-paragraph description of parent-child transfer of disability through genetics is a case in point, and does not help the reader's understanding the inheritability of disability. Within the section on 'Categories of SEN' under the heading of 'sensory and/or physical', there is a half page on brain damage, a section on visual impairment (current terminology in Australasia is *vision* impairment), and a section on epilepsy, but there is no reference to hearing impairment or deafness.

The discussion questions at the end of each section could be useful from a teaching perspective in teacher education programs, although in some cases, because of the brevity of the information presented, it would be difficult for students to have an informed discussion on the topic, and uninformed discussions may do more harm than good. While there is a single reference given as 'Further reading' at the end of each topic, this is not necessarily sufficient to deal with the complexity of many of the topics.

This book may be of some use to teacher education students in England who wish to obtain an overview of issues related to the English SEN program. I could not recommend it to Australasian readers.

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