



Reconciling individual differences with collective needs: The juxtaposition of sociopolitical and neuroscience perspectives on remediation and compensation of student skill deficits



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ABSTRACT

The increasingly diverse student population within classrooms potentially stretches the competencies of every teacher. Differentiated instruction has been offered to help teachers accommodate diverse learners, but most instructional strategies are typically directed at compensating for – not remediating – cognitive and academic skill deficits. This differentiated instruction approach is contrasted with the extant learning science and educational neuroscience literature, which suggests early intervention and remediation of skill deficits is the preferred evidence-based practice. To overcome these competing and apparently contradictory positions, we argue children should be provided with systematic brain-based differentiated instruction in inclusive classrooms to prevent skill deficits, with compensatory accommodations provided only as necessary to help children access the general education curriculum. For those who continue to struggle, we argue remedial efforts should occur outside of, and in addition to, inclusive general education instruction, given the empirical evidence supporting both practices. Implications for training and system-level reform will be addressed.

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1. Introduction

An important challenge for educators and policy makers is to determine whether disparate backgrounds and individual learner differences should be accommodated in the classroom or if differences should be attenuated once children begin formal instruction given all children are expected to acquire the same basic skills under a standard curriculum. Although most educators value and readily accommodate social, cultural, racial, gender, sexual orientation, and linguistic differences, can the same be said about cognitive, academic, and behavioural diversity in the classroom? Perhaps the larger and more difficult question to answer is what should be done if, as a result of this diversity, some children do not acquire the basic skills that others in the class master successfully?

Without fundamental building blocks for learning in place, acquisition of higher academic skills becomes unlikely. Thus,

should cognitive diversity, which likely affects academic attainment, be accommodated or remediated? The premise that children come to school with diverse backgrounds that intersect with cognitive, academic, and psychosocial functioning, lays an important groundwork for the thesis that follows. Within this framework, we explore the notions of general and special education, instructional methods for serving diverse learners, the evidence-base for what constitutes effective instruction, and neuroscience perspectives on achievement and disability. Finally, we consider how best to address learner diversity so all children may benefit from their formal education, while recognizing and valuing their individual differences as an essential element of the human condition.

1.1. Traditional service delivery for children with and without special needs

Children are expected to come to school prepared to learn, having had appropriate opportunity to develop rudimentary linguistic, motor, social, and adaptive skills. In many educational

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systems, those who struggled with formal classroom learning were deemed to have poor academic “aptitudes”, with low global intelligence thought to be the primary cause, a position still maintained by some today [1]. While low intelligence is a potential cause of learning problems, the renowned physician Samuel Orton [2] recognized that specific reading problems could occur in the presence of average intelligence, a condition which later became known as *specific learning disabilities* (SLD) [3]. Emerging in the 1960s and codified into law in many countries, the standard practice for struggling learners was to refer them for a special education evaluation. If test results found a difference between ability (often measured by a single IQ score) and achievement (also measured by standardized tests), these children were determined to have *minimal brain dysfunction* [4], and required special needs instruction as a result.

Many children were subsequently identified as having a disability, and placed in segregated special education settings, a presumably benevolent practice that led to divisiveness among educators. What ensued for the remainder of the century and continuing on to present times, is the enduring debate and controversy regarding how schools should identify children with special needs, and perhaps more importantly, how best to serve them within a public education system. With many students with special needs segregated, studies were undertaken to evaluate special education. Early studies attempting to show the relationship between cognitive “aptitudes” and intervention were not fruitful [5], as was the case with later efforts using multiple intelligences or learning styles as a framework for individualization [6]. In addition, children with disabilities could not be easily differentiated from those with low achievement based on traditional assessment practices [7], so categorical decisions regarding special education eligibility were questioned. In addition, substantial numbers of underprivileged and/or minority children were disproportionately placed in special education [8]. Evidence also emerged that showed the negative psychosocial consequences of disability labels and serving affected children in special education [9]. Not only did many students with special needs feel isolated and different from their peers, they also made little progress in overcoming their disabilities [10].

To those who advocated system reform, special education evaluations were costly, time consuming, ineffectual at determining disability, and unrelated to intervention [11]. Special education was seen as a de facto method of segregating children from diverse backgrounds, and when combined with low expectations and inadequate skill development among children in many special classrooms, many called for the end to special education [12]. The belief that these children had minimal brain dysfunction was dismissed as a fallacy [13], and there was a push to evaluate achievement and behavioural outcomes instead of wasting time and precious resources trying to determine the cause of disability [14]. With the onslaught of negative evidence, these indictments of special education beliefs and practices made it clear – something must be done for a field under siege [15].

1.2. Inclusive education for all children

Coinciding with legislative efforts to establish services for children with special needs was recognition that these children should be served in the *least restrictive environment*. For many special education opponents, this environment should be general education. What followed was a concerted effort to eliminate special education, or at least to restructure it, so that all children could be served in mainstream classrooms. Starting with mainstreaming [16], then the regular education initiative [11], and currently inclusive education [17], there has been a persistent effort to serve children with and without special needs in inclusive

mainstream classrooms. The inclusion movement was strengthened by studies showing children with disabilities did as well or even better socially and academically in inclusive environments as compared to segregated settings [18]. Inclusion of children with special needs in mainstream classrooms not only improves outcomes, but also improves peer and teacher acceptance of these children [19]. Although the transition to inclusive placements was gradual, more children with special needs are currently being served in general education than ever before [20].

From a social justice perspective, serving children with special needs in inclusive settings was seen as an opportunity to provide equal access and opportunity to overcome their historic marginalization in special education [21]. Some critics of special education evaluation went so far as to suggest disability was merely a socially constructed phenomena [22], or worse, an effort designed to oppress the lives of those affected [23]. Advocates of this perspective argued that instead of being disabled, these children were just below their peers and needed more intensive instruction to improve their academic performance [24], not specialized or individualized instruction.

1.3. Inclusion in the age of high-stakes testing

With the benefits of inclusive education, it is difficult to argue a majority of children with special needs should be served in segregated classrooms, unless their disabilities are quite severe [25]. In the late 20th Century, the United States *No Child Left Behind* legislation demanded all children should achieve standardized benchmarks, and when government funding was tied to student achievement, educators were left scrambling to help their children achieve instructional benchmarks measured by high-stakes tests [26]. General education teachers often requested that their children with special needs be excluded from high-stakes testing requirements for fear of lowering overall class achievement scores [27], which would adversely affect the school. However, for students without waivers, teachers were told to provide testing *accommodations* (e.g., reader or scribe) as a viable solution [28]. Although generally supportive of inclusive education, most teachers reported their limitations in providing such accommodations [19,29], which seemed to be an ideal role for special education teachers.

Reform advocates also suggested co-teaching by general and special educators which could provide alternative instructional methods, so children with special needs could meet mandated standards [30]. Many students began receiving *instructional supports* and *accommodations* to help them *access* the general education curriculum [31]. In addition to co-teaching, the use of non-credentialed para-educators, instructional aides, and volunteers became more prevalent in inclusive classrooms [32]. The retooling of special education not only led to different roles and personnel changes, but it also brought about new perspectives on instruction. The long-held assumption, that children with disabilities had a lifelong problem that interfered with their achievement and occupational success e.g. [33], suggested to many educators that it was best to have *different* expectations and teaching methods for children with special needs [31]. These accommodations often took the form of *compensatory* strategies designed to enable children to *access* the curriculum and experience success.

1.4. Differentiated instruction emerges to fulfill inclusive education demands

To ensure all children could meet high standards, differentiated instruction [34] emerged as a predominant solution. An extension of traditional special education individualized instruction beliefs and practices to the inclusive classroom – with a modern twist –

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