Special Educational Needs in Mainstream Schools: Evidence Review

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The EEF Guidance Report **Special Educational Needs in Mainstream Schools** is available at: https://educationendowmentfoundation.org.uk/tools/guidance-reports/special-educational-needs-disabilities

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1 Introduction

1.1 Purpose

This 'best available evidence' review was commissioned by the Education Endowment Foundation (EEF) in 2019 to inform the *SEND Guidance* document (EEF, 2020). That Guidance document was aimed at senior leaders in mainstream schools; hence the focus in this review on evidence of relevance to that audience.

This review was commissioned explicitly as **a broad overview of evidence** across a range of topics, with the intention that the EEF might then commission further, more detailed reviews of specific areas within the broad SEND field. This review was conducted in a systematic manner, but it was not commissioned as a systematic review and makes no claims to be such. The 'best available evidence' included is, however, almost all **drawn from systematic reviews of literature** relating to a review question, rather than from individual studies relating to these questions. Where systematic reviews were not available, other literature was drawn upon.

1.2 The review question and sub-topics

The review addressed one over-arching question:

> What is the best available evidence about approaches to supporting and teaching pupils with SEND that are effective in improving these pupils' academic, social and emotional outcomes in mainstream schools?

The EEF and its Advisory Panel broke down this over-arching question into eight broad topics, each with its own review questions. The broad topics were: inclusion, effective leadership around SEND, assessment and identification of needs, high quality teaching for pupils with SEND, effective use of targeted interventions, effective work with external support and effective engagement of parents of pupils with SEND.

1.3 Structure of the report

We first set out a conceptual framework for thinking about SEND (Chapter 2). This is an important chapter to read, as it sets the tone for the whole review. Then we explain our methods (Chapter 3). Following that, the systematic review evidence relating to each of the eight topics is summarised in separate chapters (Chapters 5 to 12).

In each of the evidence summary chapters, a similar structure is followed. Each begins with an introduction setting the topic in the national legislative and guidance context – including the *Special educational needs and disability (SEND) Code of Practice, 0-25 years* (DfE, 2015). Then, for each review question in that topic, one paragraph provides an overview of our findings, followed by strength of evidence

and relevance ratings. Further details are then provided in turn for: the findings; the evidence base for the findings; the strength of evidence rating (including extracts from our structured data extraction form for each review drawn upon); the relevance ratings; and, finally, references relating to that review question.
Please note that references are included at the end of the section in which a review question is addressed, not at the end of the report.

1.4 Notes on terminology

1.4.1 SEN versus SEND

The terms 'SEND' and 'SEN' are both used in this report, as are SENDCO and SENCO. Where 'SEN' and 'SENCO' are used in the literature we draw upon, we do the same. Otherwise, we use 'SEND' and 'SENDCO' to reflect the large degree of overlap between disability, as defined by the Equality Act 2010, and special educational needs, as defined in the Children and Families Act 2014 (DfE, 2015, xviii, p16). The review is, however, focused on pupils with special educational needs (SEN) requiring special educational provision (SEP), not on pupils with a physical disability or a long-term health condition that fall outside the definition of 'SEN' quoted in Figure 1.

Figure 1 The definition of 'SEN' in English law and guidance

> '6.15 A pupil has SEN where their learning difficulty **or disability** calls for special educational provision, namely provision different from or additional to that normally available to pupils of the same age.'
>
> *SEND Code of practice, 0-25 years* (DfE, 2015, pp94-95; emphasis added)

1.4.2 English school system versus USA school system

As much of the research reviewed was conducted in the USA, to help the reader, Figure 2 shows how the England's typical year groups and phases map on to those in the United States of America.

Figure 2 Year groups and phases: comparing schooling in England and the USA

England	USA schools
Reception – age 4-5	Kindergarten (K) – age 5-6
Year 1 (Y1) – age 5-6	Grade 1 – age 6-7
Year 13 (Y13) – c. age 18	Grade 12 (G12) – age 17-18
<u>2 stages (usually):</u> Primary: Reception, Y1-Y6 (age 4/5 – 11) Secondary: Y7 – Y11/ Y12/ Y13 (c age 12-16/17/18)	<u>3 stages:</u> Elementary: Grades K-5 (ages 5-11) Middle school: Grades 6-8 (c. ages 11-14) High school: Grades 9-12 (c. ages 14-18)

Primary School: Y1-Y6	Equivalent to USA Grades K-G5
Secondary School: Y7-Y13	Equivalent to USA Grades 6 - 12

1.4.3 Contextual variability in meaning of SEND terminology

Readers need to be aware that the definitions attached to terms, such as, 'disability', 'learning disability', 'emotional and behavioural difficulties', varies over time and by legislative context. Many of the systematic reviews drawn on for this report were written using terminology based on the United States of America (USA) context. The meanings of frequently used terms differ markedly in the USA context compared to the context in England. In this evidence review, we use the terminology as in the relevant systematic review/s but also provide the equivalent term currently used in England. Figure 3 sets out, for ease of reference, the main differences that readers need to be aware of and the relevant equivalent terms.

Figure 3 SEN terms used in USA context and their meaning or equivalent term in context of England

Terminology	**Meaning in USA context**	**Meaning or equivalent term in context of England**
Disability	'[…] **having** an intellectual disability, a hearing impairment (including deafness), a speech or language impairment, a visual impairment (including blindness), a serious emotional disturbance (referred to in this part as "emotional disturbance"), an orthopedic impairment, autism, traumatic brain injury, another health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, **and who, by reason thereof, needs special education and related services**' (IDEA Regulations, Part B, 300.8, a (1))	**Equivalent term: Special educational need (SEN):** 'A child or young person has SEN if they have a learning difficulty or disability which **calls for special educational provision to be made** for him or her.' (DfE, 2015, xiii, p15) **Meaning of 'disability' is different:** i) ' […] a physical or mental impairment which has a long-term and substantial adverse effect on their ability to carry out normal day-to-day activities' (xviii, p16) ('long-term' = 'a year or more'; 'substantial' = 'more than minor or trivial'). (DfE, 2015, xviii, p16) ii) Disability included in 'SEN': 'a disability that prevents or hinders him or her from making use of facilities of a kind generally provided for

		others of the same age in mainstream schools […]' (DfE, 2015, xiv, p15-16)
Learning disabilities/specific learning disabilities	'a disorder in one or more of the basic psychological processes involved **in understanding or in using language, spoken or written**, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.' **Excludes** 'learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage' (IDEA Regulations, Part B, 300.8, c, 10),	**Equivalent term: 'Specific learning difficulties':** 'affect one or more specific aspects of learning' (e.g. dyslexia, dyspraxia, dyscalculia)' (DfE, 2015, 6.31, p98)
Learning difficulties	Tends not to be used in USA	**Learning difficulties** 'significantly greater difficulty in learning than the majority of others of the same age' (DfE, 2015, xiv, p16) – includes 'specific learning difficulties' but also generalised learning difficulties of varying severity (Emerson & Heslop, 2010, p1)
Developmental disabilities	'a group of conditions due to an impairment in physical, learning, language, or behavior areas. These conditions begin during the developmental period, may impact day-to-day	**Equivalent terms: 'developmental disabilities'.** Note: 'developmental delay' and 'global developmental delay' are general terms used during the developmental period; long-term

	functioning, and usually last throughout a person's lifetime' (Centers for Disease Control and Prevention, Developmental Disabilities homepage; Zablotsky et al., 2019)	impairments in physical, learning, language, or behaviour areas that originated in childhood are 'developmental disabilities'
Emotional and behavioural disorders	'Emotional disturbance' is the term defined in the IDEA Regulations.	**Equivalent term: 'emotional and behavioural difficulties'**. Not used in England since Sept 2014. Current term is 'social, emotional and mental health difficulties'.
Intellectual disabilities	'Intellectual disability means significantly sub-average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance. The term "intellectual disability" was formerly termed "mental retardation."' IDEA Regulations, Part B, 300.8, c, 6.	**Equivalent term (Education): 'learning difficulties' at moderate-to-severe, severe, or profound levels** Excludes 'specific learning difficulties' **Equivalent term (Health and Social Care): 'learning disabilities' or 'learning difficulties'.** (Emerson & Heslop, 2010, p1)
High incidence disabilities	Varies from state to state	**Equivalent term: high incidence needs/SEN.** Includes speech, language and communication needs, moderate learning difficulties, social, emotional and mental health difficulties, and autism (DfE, 2019, p5).

Due to the variability in use of categories of SEND, we recommend that anyone using published research on SEND should take careful account of the definitions of the

types of need of included participants, where this is provided. Williams et al. (2016) examined how the term, 'learning disability' (LD) was defined in research published during 2001 to 2013. They found identification criteria varied widely and that about one-third of the studies they looked at did not describe who identified the participants as having LD nor how they were identified to be participants. Emerson & Heslop (2010) provide a clear account of what the terms 'learning disability', 'learning difficulty' and 'intellectual difficulty' mean in England currently, and how this differs or not from use in the USA. We have drawn on this is Figure 3.

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2 A framework for thinking about SEND

This chapter of the *SEND Evidence Review* presents an approach to thinking about pupils with special educational needs and/or disabilities (SEND) that underpins the remainder of the evidence review. The aim is that this chapter will be useful in itself and that it will help readers to make best use of the evidence summarised in chapters 5 to 12.

2.1 Underlying ethos based on rights, values and knowledge about humanity

The starting points for educating pupils with SEND are the same as for educating any other pupil:

- an acceptance of diversity and of children's rights as set out in the UN Convention on Children's Rights
- the importance of the environment in which and with which pupils and staff interact in shaping their development over time
- the perspective that all pupils can learn, and that good teaching enables this.

An acceptance of diversity among pupils in our mainstream schools is a values-based approach (Lindsay & Thompson, 1997), underpinned by international agreements (e.g. the UN Convention on Children's Rights, 1989) and by education law in England (Equality Act 2010; Children and Families Act 2014). Accepting diversity means having the same educative aim for every child or young person in the school: to teach them so well that they can realise their maximum potential; that is, to promote their quality of life by bringing out the best in them.

Robust psychological theory, supported by decades of research (Bronfenbrener, 1979; Bronfenbrenner & Morris, 2006), clarifies that children's development is the result of everyday activities and relationships in their immediate environment, plus interactions among 'within child' factors, the wider environment, and time-related processes. The implication for all education settings is to ensure that their environment is conducive to optimal learning and development.

The perspective that all pupils (and teachers) are capable of learning across the lifespan, and that good teaching is the primary process that enables learning, is a 'mindframe' supported by educational research involving millions of pupils across the world (Hattie, 2009; Hattie & Yates, 2013; Hattie & Zierer, 2018), including those with special educational needs (Mitchell, 2014).

2.2 Informed by robust theory on how people learn and develop

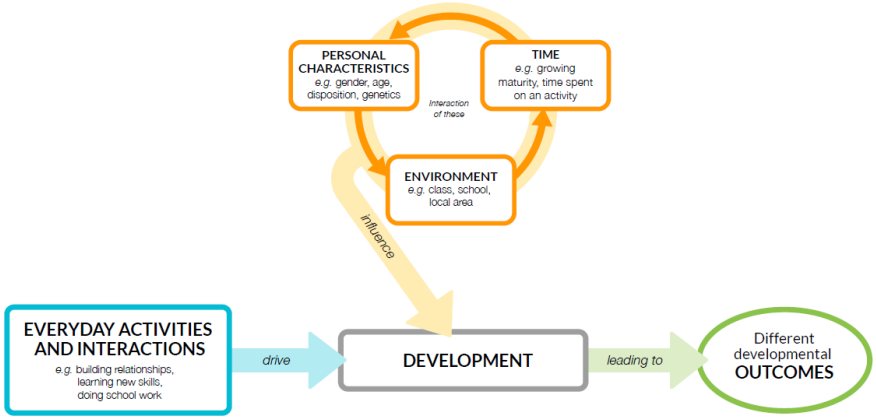
To create a mainstream school environment where pupils with special educational needs can thrive requires understanding how immediate and progressively more distant environmental features impact on children's learning and development. Urie Bronfenbrenner spent an academic lifetime developing and refining our understanding of human development, drawing on his own and others' research (summarised accessibly in Rosa & Tudge, 2013). Here we draw upon his mature version of the **bioecological** theory of human development as a useful framework for

thinking about educating pupils with special educational needs in mainstream schools. Bioecological theory describes the **concurrent interactions** of developmental processes with personal characteristics, context, and time. In short, this developmental theory is that:

- the **drivers** of development are progressively more complex **everyday activities and interactions**
- development is also **influenced by** the interaction of personal characteristics, context and time.

Figure 4 Core features of Bronfenbrenner's bioecological theory is a summarised version of the theory. The following text provides further detail.

Figure 4 Core features of Bronfenbrenner's bioecological theory



2.2.1 The drivers of development

The "types of everyday activities and interactions (with objects, symbols and other persons) in which individuals are actively and consistently engaged" (Rosa & Tudge, 2013, p255) are viewed as the **driving force** of child development: **how** development happens. Bronfenbrenner called these activities and interactions "proximal processes" because they occur in the immediate environment.

The activities and interactions taking place in class and school environments are a big driver of the way in which every school-age child develops. These 'activities and interactions' can be organised by the adults in school to be supportive of learning and development. Educators can take actions to make a difference to the outcomes for all children through activities and interactions.

2.2.2 Influencers of development: i) Personal characteristics

Personal characteristics of the people involved in the activities and interactions that drive human development **influence** that development, according to the bioecological theory. For example, each person may differ in the extent to which they initiate or sustain engagement in activities and interactions. This will influence

the quality and extent of interactions and activities engaged in, for example, among pupils and between pupils and teachers, and thus influence development. As an example in practice, a teacher who is more experienced working with pupils with special educational needs may be more confident in designing learning opportunities for these children in their classroom. If this leads to more learning opportunities, a child may learn more rapidly in this teacher's classroom.

School ethos, staff attitudes and the quality of teaching and learning taking place in school can all affect how personal characteristics impact on development. Good teaching and positive behaviour support can address potential barriers to learning and support positive social interactions. Good teaching can also enhance the positive resources a pupil brings with them to school. The 'detrimental resources' a pupil may bring highlight the need for some targeted and specialist approaches being included in the school's collective 'toolkit' and teachers' repertoires. These characteristics may well set some limits on what can be taught and learned (not all aspects of disability can be overcome by adjustments to the environment and the activities and interactions that take place there). In a school accepting of diversity, however, every effort will be made to "help students exceed what they think is their potential" (Hattie & Zierer, 2018, p167). Similarly, the teachers and other staff will ensure that they have ambitious goals for every pupil.

2.2.3 Influencers of development: ii) Context (environments)

The bioecological theory sees the environment in which a person is placed as the second main factor **influencing** human development. The environment is conceptualised as a diverse, interactive, and layered system:

- the immediate environments in which activities and interactions take place (e.g. home, classroom, playground, after-school club) are viewed as the most important contextual influence on development ('microsystems')
    - the relationships that link one or more of these micro-environments ('mesosystem') are also important influences on development (e.g. parent-teacher meetings, bringing a school friend home)
- the second layer of the environment affecting human development (the 'exosystem') is one in which the individual/s concerned are not actively engaged but decisions are taken at that level that affect them and thus influence their development (e.g. senior leadership meetings in which school policies affecting pupils are discussed and decided upon; a local authority making decisions about school placement)
- the broader cultural environment ('macrosystem') is also viewed as influencing development (e.g. through legislation, shared beliefs and cultural norms).

The various immediate environments (microsystems) in which a child or young person engages at home, in different classes at school, in the playground, in afterschool activities and through hobbies, and the relationships linking these (mesosystems), are major influences on a child or young person's development. So, too, are the most relevant exosystems for education: the school (e.g. its ethos,

leadership, curriculum) and the local authority and, if relevant, the multi-academy trust to which the school belongs. Positive whole school approaches that pay attention to activities and interactions inside and outside classrooms in the school and that involve everyone within the school (including administrative and support staff, all pupils, parents, governors, teachers, and others) can have an even greater impact on learning and development.

2.2.4 Influencers of development: iii) Time

The types of activities and interactions in which a person engages are also **influenced** by time, according to the bioecological theory. For a school pupil, the key influences of time are:

- how time is spent during each timetabled period in school;
- the frequency with which particular activities and subject lessons are distributed across the timetable for a half-term, term or school year;
- how pupils change over time as they grow older and interact in different ways with the differing environments they encounter.

The developmental impact of the first two types of time are, again, aspects that good teaching can use to influence the development of all pupils, including those with special educational needs, in positive ways.

2.3 The bioecology of special educational needs

In education, we are used to hearing about the 'social' versus the 'medical' model of disabilities. The 'social model' sees the disability as a property of the environment, not the person. The 'medical model' sees the disability as a property of the person. Adopting a **bioecological** approach provides a framework that emphasises the environmental perspective whilst also clarifying the more individual focus of a bio/medical model. The primary focus is changing the environment to enable optimal learning and development: crucially, 'environment' includes the everyday activities and interactions taking place as well as the physical environment. By assessing a pupil's immediate environment and the pupil's responses within that environment, the pupil's barriers to learning can be identified and then addressed. This is an empowering approach for teachers, as it underlines that they already have most of the knowledge and skills to teach successfully the diversity of pupils in their school and that they are able to augment their 'toolkit' through evidence-based professional development activities.

2.3.1 Types of need

Needs can be thought of in three ways (Lewis & Norwich, 2001):

- common needs (e.g. to be loved and cared for, to receive effective teaching)
- specific needs that are shared with a similar group (e.g. pupils with hearing impairment need access to means of audiological support, pupils with a physical disability need means for optimising their mobility and access)
- unique needs (e.g. arising from a combination of).

In England[1], special educational needs are viewed as part of a wider group of additional educational needs (AEN). These additional support needs may apply to any pupil who requires additional support for learning for reasons such as SEND, family poverty, pupils who are Looked After by the local authority, pupils who speak English as an additional language. The non-SEND types of AEN could apply to any pupil. However, pupils with SEND are more likely to have additional needs (e.g. to be Looked After) because they tend to experience a wide range of educational and social inequalities and challenges.

Beyond simple classification

To support pupils with SEND, the task is not only to decide whether a pupil 'has SEND' – note not 'is SEND' – but to identify the characteristics of their needs. The first steps may be to identify the primary type of SEND (Figure 5). However, children often have significant difficulties in more than one area of need.

Figure 5 The four broad areas of need with their component categories (DfE, 2015)

- Communication and interaction
    - Speech, language and communication needs (SLCN)
    - Autism spectrum disorder (ASD)
- Cognition and learning
    - Moderate learning difficulties (MLD)
    - Severe learning difficulties (SLD)
    - Profound and multiple learning difficulties (PMLD)
    - Specific learning difficulties (SpLD)
- Social, emotional and mental health difficulties
- Sensory and/or physical needs
    - Vision impairment (VI)
    - Hearing impairment (HI)
    - Multi-sensory impairment (MSI)
    - Physical impairment disability (PDI)

Source: Informed by *SEND Code of Practice, 0-25 years* (DfE, 2015, sections 6.28-35).

Thinking of pupils with SEND having a primary need (e.g. ASD) is helpful as a starter but we must also consider secondary need(s) (e.g. the pupil also having SLCN and or a physical disability, as well as ASD). In some cases, secondary special needs are clearly related to the primary need (e.g. pupils with HI will typically have SLCN also because HI has a significant effect on speech and language development). In other

[1] The term 'additional educational needs' has different meanings in different contexts – even within the countries making up the UK.

cases, secondary needs may occur separately from the primary need (e.g. a child with SpLD may also have a physical disability).

Needs and diagnosis

Special educational needs are defined in relation to learning in school, whereas a diagnosis is the term used by the medical and allied professionals in relation to identifying particular physical and/or mental health conditions with defined characteristics.

Diagnosis can be very helpful for certain conditions (e.g. hearing or visual impairment). This often occurs son after birth or in the early years for children with severe or profound SEND. However, diagnosis is less helpful or relevant for the majority of pupils with SEND. More important for teaching and learning in all cases is to determine the pupils' educational needs because:

- Diagnostic categories are not discrete, and pupils may have needs experienced by pupils with other primary needs (e.g. there is overlap between the needs of pupils with ASD and those with SLCN in terms of both language and behavioural/emotional needs.

- Diagnoses provide general not specific indicators for action (e.g. they might suggest some general teaching and learning approaches for a group sharing a diagnosis, but these may not be effective for an individual child).

- Diagnosis focuses on within-child difficulties, whereas we have seen (Figure 4 Core features of Bronfenbrenner's bioecological theory) that everyday activities and interactions drive development, whilst other factors, such as environments and time, are also influential, in mutual interaction with personal characteristics.

Benefits of diagnosis

Diagnostic labels do have other benefits. By highlighting the similarity of groups of children and young people, diagnostic labels help parents, and the young people, identify appropriate support groups in the voluntary and community sector.

Also important, but more contentious, is the use of diagnostic labels to access resources. This is contentious because of the variation of aspects of needs within each diagnosis category (e.g. severity), and also the overlap of diagnostic categories with needs (see above). Diagnostic labels may privilege some pupils inappropriately; undermining equity (e.g. schools or LAs may require certain specific diagnosis to access resources that might be equally suitable for other pupils with SEND). For example, recent research demonstrated that pupils with SLCN received less support than pupils designated as having ASD, despite the pupils with SLCN having greater learning needs (Dockrell, Ricketts, Charman, & Lindsay, 2019).

2.3.2 Understanding needs in a learning context

Teachers' role in assessment of learning needs is not about diagnosing a condition; rather it is about seeking to identify what is required for the pupil to learn. Most pupils will make good progress with universal teaching approaches, and others will do so with more targeted interventions. Yet there may remain a small minority of pupils who present a challenging variation in barriers to learning that are not easy for the class teacher to identify and respond to alone. In a school that values diversity, an automatic 'mindframe' would consider a learning problem not as something for which the child is to blame, but as a sign that something in the pupil's bioecological environment needs to be changed.

Where the school leadership and teachers' peer culture is supportive, the first step in seeking to understand a pupil's barrier/s to learning may be to seek advice from colleagues. Supportive peer observation of a lesson, for example, can provide 'data' on which to build a hypothesis together as to what may need to change. Where the pupil's optimal development is valued, the teachers will have the flexibility to try new things: to be alert to the need to try a different teaching strategy; to look with fresh eyes at the physical environment of the classroom, including the impact of where the pupil is seated; to test out a different evidence-based intervention. Once the teacher has formed a hypothesis about what may need to be done differently, it is a good time to meet with the pupil's parents for a discussion.

Positive relationships between teacher and parents create a collaboration of different sorts of expertise and knowledge gained in different environments (home vs. school). Although children are likely to behave differently at home and at school, understanding the nature of these differences can be a useful insight into what may need to change in the school environment. This may also involve seeking advice from an external professional, such as an educational psychologist or speech and language therapist, subject to parental agreement and availability. (See Chapter 7 for review evidence on assessment and identification of needs.)

2.4 Effective education to support optimal development

If "the types of everyday activities and interactions (with objects, symbols and other persons) in which individuals are actively and consistently engaged" (Rosa & Tudge, 2013, p255) are the driving force of human development, then effective education means ensuring that these activities and interactions are designed to ensure optimal development.

Fortunately, there is a **sound evidence base** for deciding what types of activities and human interactions equate with effective education, as publications such as John Hattie's (2009) synthesis of over 800 meta-analyses relating to pupil achievement and the Education Endowment Foundation's *Teaching and Learning Toolkit* (2018) have demonstrated. Hattie's categories for contributions to learning – curricula, and teaching approaches, student, teacher, home, school – can be thought of as mapping on to Bronfenbrenner's proximal processes, person, and context factors. The effective teaching approaches identified by Hattie's work and in the *Toolkit* are also

relevant, either directly or in adapted form, for pupils with special educational needs.

Mitchell's (2014) meta-analysis of research specifically about effective teaching for pupils with special educational needs discusses 27 strategies, each of which are applicable to all pupils but that are also effective for children with special educational needs. This is also supported by a more recent review, *High-leverage practices in special education* (Mcleskey, Barringer, Billingsley, Brownell, Jackson, Kennedy, Lewis, Maheady, Rodriguez, Scheeler, Win & Ziegler, 2017).

That evidence, and this evidence review, clearly support the view that a **focus on effective teaching** should be the starting point of lesson planning for pupils with SEND, not individual needs or labels – since effective teaching strategies and approaches appear to work universally to support children's learning. Understanding of individual needs may then be used to guide teaching adjustments to enhance learning outcomes for sub-group and individual pupil needs. (See Chapters 8, 9 and 10 for the review evidence on effective teaching for pupils with SEND.)

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3 Review questions and method

In this chapter, we first set out the review questions and then describe the method we used to search for, select, and summarise the evidence. It concludes by describing how we assessed the strength of evidence and its relevance to England's mainstream schools.

3.1 The review questions

The **over-arching question** that focused the evidence review was:

> What is the best available evidence about approaches to supporting and teaching pupils with SEND that are effective in improving these pupils' academic, social and emotional outcomes in mainstream schools?

This question was addressed through eight topics each with one or more review question/s (Figure 6). Figure 6 also indicates in which Chapter/section of this report the evidence is summarised.

Figure 6 The review questions

Review topics and their specific review question/s	**Relevant chapter**
1. Inclusion	2 & 5
What is inclusion?	2
How is inclusion defined by both practitioners and researchers?	5.2
What impact do different variants of inclusion have on pupil outcomes?	5.3
What is the evidence regarding inclusive responses to challenging behaviour?	5.4
2. Effective leadership of SEND in mainstream schools	6
What is the role of the school leader in effective provision for pupils with SEND?	6.2
What is the role of the SENDCO in effective provision for pupils with SEND?	6.3
3. Assessment and identification of learning needs	7

How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision?	7.2, 7.3, 7.4
4. High quality teaching for pupils with SEND	8
What does high quality teaching mean for pupils with SEND? Are there particular adaptations/considerations?	8.2
How should teachers effectively work with learners with SEND? For example, to what extent should they ensure that learners have independence and autonomy in their learning in order to support progress?	8.3
5. Effective use of targeted interventions	9
What factors, in general, make using targeted interventions for pupils with SEND more effective?	9.2
6. Deployment of TAs and support staff	10
How should schools effectively deploy teaching assistants (TAs) and support staff to support pupils with SEND to make progress?	10.2
7. Effective work with external support	11
How should schools work with external support to be effective in supporting pupils with SEND to make progress?	11.2
8. Effective work with parents of pupils with SEND	12
How should schools effectively engage parents of children with SEND?	12.2

3.2 Method

In this evidence review, we focused on locating **systematic reviews relevant to the review questions**. We conducted the highest quality evidence review we could within the constraints of the time and budget available. We followed most of the steps of a systematic review process (Figure 7) but we were not commissioned to conduct a systematic review.

Figure 7 The steps followed in this review of evidence

- Planning the review and defining limits
- Scoping searches to test out search terms
- Finalising search terms
- Finalising inclusion/exclusion criteria based around **PICOS**: **P**opulation, **I**ntervention, **C**ontext*, **O**utcomes, **S**tudy design
- Agree search strategy (Grouped terms joined with AND; search strings in each group joined with OR)
- Searching (4 databases; 2 cross-searching sites)
- Screening:
    - Screen 1:Titles and abstracts
    - Screen 2: Full text PICOS plus check of relevance of systematic review's research questions & search limits;
    - Screen 3: Check of results of screen 2
- Structured data extraction
- Screen 4: Check of full data extraction; make final inclusion/exclusion decision
- Synthesis of results
- Assessment of strength and relevance of evidence

*Usually '**C**omparison group'

3.2.1 Searching

We searched for relevant systematic reviews using four databases and two cross-searching sites (Figure 8).

Figure 8 Databases used in the search

Database name	Search platform
British Education Index	Ebsco
Education Research Complete	Ebsco
ERIC	Ebsco
PyscINFO	Ovid
Cross-searching tools	
Scopus	Elsevier
Web of Science/Social Science Citation Index	Clarivate Analytics

The limits agreed for the search are set out in Figure 9.

Figure 9 Limits set on the evidence search

Dates:	January 2000 to December 2019;
Language:	English language;
Type:	scholarly/academic/peer-reviewed articles
Fields:	Title; Abstract; Subject terms; Key words

The inclusion criteria we used are set out in Figure 10.

Figure 10 PICOS Table – SEND Evidence Review

PICOS element	**Inclusion criteria for this review**
Population	• A. The review article is about school-age pupils with SEND - include if: a1) all included studies are based on school-age pupils with SEND a2) OR the review separately reports findings/results for school-age pupils with SEND a3) OR at least 80% of the studies included in the review are, in turn, at least 80% about school-age pupils with SEND. OR • B. The review article is about any of these adults working with school-age pupils with SEND: b1) TAs or LSAs or support staff working in school re pupils with SEND b2)External professionals/practitioners working with school re pupils with SEND b3) Parents and school staff working together re their child/ren with SEND b4) School leader (head teacher/principal etc) and/or SENCO working to provide effective support for pupils with SEND b5) OR the review separately reports findings/results for these adults working with/for school-age pupils with SEND b6) OR at least 80% of the studies included in the review are in turn at least 80% about these adults working with school-age pupils with SEND.
Intervention – or approach or practice	Include if: review article research questions are relevant to at least one of our review questions

Context[2]	Include if: • 1. all included studies took place in a school (mainstream or special) or any setting relevant to mainstream school • 2. OR the review separately reports findings/results for studies that took place in a school (mainstream or special) or any setting relevant to mainstream school • 3. OR at least 80% of the studies included in the review are in turn at least 80% about studies that took place in a school (mainstream or special) or any setting relevant to mainstream school
Outcome/s	Academic attainment and learning OR Social and emotional learning outcome/s (quantitative). Include if: A) the review article reports findings/results for school-age pupils with SEND OR B) at least 80% of the studies included in the review are, in turn, at least 80% about school-age pupils with SEND and outcomes are reported OR C) the review reports findings/results for [our Population of] adults working with school-age pupils with SEND OR D) at least 80% of the studies included in the review are in turn at least 80% about [our Population of] adults working with school-age pupils with SEND and outcomes are reported .
Study design	Include if the article is any of the following types of review: Systematic; Evidence; Research; International; Best evidence; Meta-analysis; Meta-synthesis; Quantitative synthesis (See Figure 11 for details of study design terms included)

In constructing the search strategy, we developed four groups of search terms based on PICOS (Figure 10):

- Group A = **S**tudy design
- Group B = **I**ntervention (i.e. Topics 1 -8)
- Group C = **P**opulation (pupils with SEND)
    - C1: broad terms for types of need;
    - C2: specific terms for types of need
- Group D = **C**ontext (i.e. school)
- Note: scoping showed us not to use **O**utcomes in the initial search

[2] Usually 'comparator group'.

Figure 11 provides an example of a group of search terms: those relating to study design.

Figure 11 Example of a search terms grouping

Group A – Study Design:
A1 - meta-analys* OR meta-synthes*
A2 - (quantitative OR "best evidence" OR evidence OR research) N3 (synthes*)
A3 - (systematic OR international OR research) N3 (review*)

Search string lines within groups (e.g. A1, A2) were joined with 'OR'. Within Group B, there were terms relating to each of the eight review topics (Figure 12 provides an example).

Figure 12 Example of search terms for a Group B topic

Topic: Assessment of learning needs: B1.1 - (Need* OR disabilit* OR SEN OR SEND OR educat*) N3 (assess* OR identifi* OR diagnos* OR profil*) B1.2 - (educat* OR achiev* OR content OR learn* OR formative OR peer* OR self*) N3 (assess* OR regulat* OR manag*) B1.3 - "assessment for learning" OR "assess, plan, do, review" OR APDR OR "response to intervention" OR RtI OR "precision teaching" OR "standard celeration chart"

We used the Group B topic search terms in turn with Groups A, C and D. Search groups were joined with the 'AND' command: for example, 'Group A AND Group B Topic 1 AND Group C AND Group D'.

We conducted eight separate searches within each of the four databases and two cross-searching sites we used. Figure 13 shows the number of systematic reviews that were reviewed at each stage of the process, by review topic.

We also searched for relevant publications (e.g. guidance reports; literature reviews) from key organisations, such as the EEF, the Early Intervention Foundation, Campbell Reviews, EPPI-Centre, Cochrane Collaboration systematic reviews, the What Works Clearinghouse, the Center for Exceptional Children , Nuffield Foundation, and the Department for Education.

Where we found no systematic reviews/reports, we searched without Group A Study Design terms to find the best evidence on effective practice to inform that part of the review.

Figure 13 Number of systematic reviews by review topic and stage of reviewing process

Stage	Inclusion	Leadership	Assessment	High quality teaching	Using targeted interventions	Use of TAs	Working with external support	Working with parents
Abstracts*	325	9	204	1273	492	23	392	147
After Screen 1	58	1	14	128	182	9	45	27
Downloaded	58	1	14	115	141	9	44	27
After full text PICOS	21	1	4	75+	75+	4	8	3
Data extraction	21	1	4	75	61	4	8	3
Used to answer RQ	21	1	4	38	29	3	3	3

*= After de-duplication of abstracts found through more than one database/cross-searching

+= Agreed with EEF and Advisory Panel an adapted process to handle this number of systematic reviews within time and budget.

3.2.2 Screening and data extraction

After removal of duplicates, all abstracts were screened for relevance using the PICS elements of our PICOS table. Those that met PICS criteria were downloaded as full texts. All full texts were screened first to ensure they met the full PICOS inclusion criteria and that the review research questions were relevant to our evidence review. This screening was double-checked by the lead author. Structured data extraction was completed for all those review articles that met these criteria, followed by completion of the ten critical appraisal questions from the CASP systematic review checklist (CASP, 2018). This was sense checked by the lead author and any queries resolved by reviewing the article again.

3.2.3 Assessing strength of evidence

Once all the reviewed evidence relevant to a specific research question had been synthesised, the EEF required us to make an overall judgement of the strength of the evidence on a 3-point scale: high, medium, low. To reach this judgement, we took into account eight relevant dimensions (Figure 14). We developed this new multi-dimensional framework because none of the alternative approaches we considered met our requirements for assessing with transparency the range of evidence we needed to include in the review. Because of the range of types of research questions we were seeking to answer, this review needed to include theoretical and qualitative research, as well as the robust quantitative research more usually included in EEF literature reviews. We wanted to include consideration of the scale and quality of each systematic review (Figure 14, dimensions 2 – 6) and of the quality of studies included in each systematic review (Figure 14, dimensions 7-8), as well as an assessment of the 'developmental stage' of the available evidence relevant to each of our review questions (Figure 14, dimension 1). The transparency with which we set out the dimensions we took into consideration means that our subjective judgement of the strength of evidence relating to each review question can be reviewed by every reader and alternative assessments made.

Figure 14 Multi-dimensional framework used to assess strength of evidence

Dimension of assessment of strength of evidence Description
1. Place on 'development of theory' to 'evidence-based practice' evidence line Scientific research evidence on any topic is accrued progressively, starting from research designed to produce a robust theory. Intervention research evidence begins with a robust theory of change and logic model, and builds up preliminary evidence, then evidence of efficacy, then of effectiveness in the 'real world', then at scale and over time, based on rigorous research methods including high quality quasi-experimental designs and high quality random controlled trials. This line of evidence development is illustrated, for example, in the Early Intervention Foundation's Guidebook Standards of Evidence. There are multiple definitions of 'evidence-based practice': in the SEND field, the classifications set by the Council for Exceptional Children (CEC, 2014) are influential.
2. Number of systematic reviews showing relevant results This dimension assesses the scale of systematic review evidence relevant to the review question.
3. Consistency (if >1 systematic review) and precision of any quantitative results This dimension assesses the reliability of quantitative results reported in the systematic review/s.
4. Quality of each included systematic review We used the 10 CASP (2018) questions to appraise the overall quality of each included systematic review.
5. Total number of included studies in these systematic reviews This dimension assesses the scale of the evidence in terms of the number of individual relevant studies included in the systematic reviews.
6. Total number of relevant participants This dimension assesses the scale of the evidence in terms of the number of relevant participants in the relevant studies included in the systematic reviews.
7. Study designs of included studies in the systematic reviews This dimension assesses the robustness of the research design/s of studies included in each systematic review. 'Robustness' was defined in terms of ability to show causal impact on pupil outcomes.
8. Quality assurance of studies included in the systematic reviews This dimension assesses how, if at all, the quality of studies included in the systematic reviews had been assessed.

3.2.4 Assessing relevance to England's mainstream schools

Unlike some other strength of evidence assessment tools, such as Gough (2007)'s 'weight of evidence' tool, we deliberately chose to separate out assessing the strength of the research evidence from assessing its relevance to staff in mainstream schools in England. Again, we used a multi-dimensional framework to reach our overall judgement (Figure 15). Again, our aim was transparency so that readers could review our assessment and make their own judgement. Our assessment of relevance was made on a 3-point scale: high/medium/low.

Figure 15 Multi-dimensional framework used to assess relevance of evidence to England's mainstream schools

1. Relevance of the participants in the studies included in the systematic reviews This dimension assesses the extent to which participants in the studies included in the relevant systematic reviews were primary and/or secondary pupils with SEND or relevant parents, staff or external professionals.
2. Relevance to mainstream schools of the research questions addressed by the included systematic reviews This dimension assesses the extent to which the research questions addressed by the included systematic reviews were relevant to England's mainstream schools.
3. Relevance to England's legislative and *SEND Code of Practice* (DfE, 2015) context This dimension took account of the national context/s in which studies included in reviews took place. It assesses the extent to which the evidence made sense in the context of English law, statutory guidance and recommended good practice.
4. Relevance to the educational and external services delivery context in England This dimension took account of the national context/s in which studies included in reviews took place. It assesses the extent to which the evidence made sense in the English public sector delivery context (education, health, social care).

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4 Summary overview of evidence linked to the Chapter 2 framework

Figure 16 provides a summary overview of the strength and relevance of the evidence detailed in the chapters that follow. It maps the review questions on to the various levels of the bioecological environment (or 'context') we referred to in our framework for thinking about SEND (Chapter 2).

It shows that, overall, the strongest evidence relates to the impact on pupil outcomes of everyday teaching practices occurring within the classroom (and closely related spaces in schools) i.e. to the **drivers of pupil development** (as set out in Figure 4 Core features of Bronfenbrenner's bioecological theory in Chapter 2). These everyday practices occur within the pupil's immediate face-to-face environment (microsystem). This evidence is highly relevant to staff in England's mainstream schools.

The relationships school staff make with a pupil's parents and relevant external professionals link up key microsystem settings of a pupil's bioecological environment, creating the pupil's mesosystemic context. These links **influence pupil development**. In Figure 16, it can be seen that the strength of evidence at this mesosystemic level is medium at best but highly relevant to England's mainstream schools.

Moving outwards to the decisions and practices of school leadership around SEND, Figure 16 also shows that there is limited evidence relating to this level of a pupil's environment (exosystem), in which the pupil is not directly involved but by which their development is affected. Again, this level of the environment/context **influences pupil development** and so the limited evidence of what is effective in improving pupil outcomes needs to be addressed in future research and systematic reviewing.

Finally, at the outermost level of a pupil's bio-ecological context (macrosystem), the evidence relating to the internationally influential concept of inclusion ranges from strong evidence of impact on academic outcomes for pupils without SEND to there being a gap (at systematic review level) in evidence for the impact on academic outcomes for pupils with SEND. This gap too needs to be filled by future research and systematic reviewing.

Figure 16 Summary of the strength and relevance of the evidence in relation to the review questions, mapped to levels of context

Environment/ Context	**Review topic** Review question/s	**Strength of evidence reviewed** (details, where required)	**Relevance to England's mainstream schools**
Inclusion as a shared concept in the Macrosystem	**Inclusion** 1. How is inclusion defined by both practitioners and researchers?	**Low**	**High**
School as Exosystem	**Leadership around SEND** 1. What is the role of the school leader in effective provision for pupils with SEND?	**Low** **Gap** (impact on outcomes for pupils with SEND)	**Medium**
	2. What is the role of the SENDCO in effective provision for pupils with SEND?	Low **Gap** (impact on outcomes for pupils with SEND)	**Low**
School links to parents and external professionals as Mesosystem	**Assessment and identification of needs** How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision?	**Low** (graduated response) **Low/medium**(effectiveness of graduated response on outcomes for pupils)	**High**
		Medium (Multiple informant assessment)	**High**
		Low (Alternative assessment)	**Low**
	Working with external support	**Medium**	**High**

	How should schools work with external support to be effective in supporting pupils with SEND to make progress?		
	Working with parents of pupils with SEND How should schools effectively engage parents of children with SEND?	**Low** (parents of pupils with autism or attention deficit hyperactivity disorder [ADHD]) **Gap** (all other parents of pupils with SEND)	**High**
Classroom as Microsystem	**Inclusion in classroom practice** 1. What impact do different variants of inclusion have on pupil outcomes?	**High** (academic outcomes: pupils without SEND) **Medium** (Social outcomes: pupils with specific learning difficulties [SpLD]) **Gap** (academic outcomes: pupils with SEND)	**High**
	2. What is the evidence regarding inclusive responses to challenging behaviour?	**High**	**High**
	High quality teaching for pupils with SEND 1. What does high quality teaching mean for pupils with SEND? Are there particular adaptations/considerations?	**High**	**High**
	2. How should teachers effectively work with pupils with SEND? For example, to what extent should they ensure that learners have independence and autonomy in their learning in order to support progress?	**Medium to High**	**High**
	Effective use of targeted interventions	**High**	**High**

	What factors, in general, make using targeted interventions for pupils with SEND more effective?		
	Effective use of TAs How should schools effectively deploy teaching assistants (TAs) and support staff to support pupils with SEND to make progress	**High**	High

5 Evidence on inclusion

5.1 Introduction

In this chapter, we set out evidence from systematic reviews in relation to three research questions in turn:

- How is inclusion defined by both practitioners and researchers?
- What impact do different variants of inclusion have on pupil outcomes?
- What is the evidence regarding inclusive responses to challenging behaviour?

To set the scene, first we include here the legal and policy position in England regarding inclusion.

As noted in Chapter 2, inclusion has moral, human rights, legal and practical aspects. English education law and policy on SEND has been heavily influenced by the Warnock Report (1978) and, later, by the UK being a signatory of the Salamanca World Statement (UNESCO, 1994) and the United Nations Convention on the Rights of Persons with Disabilities (2006) (United Nations, 2006). The shift has been from establishing a human right to education (after the Warnock Report) to a "general presumption in law of mainstream education": the *SEND Code of Practice, 0-25* (DfE, 2015) states that:

> "1.26 As part of its commitments under articles 7 and 24 of the United Nations Convention of the Rights of Persons with Disabilities, the UK Government is committed to inclusive education of disabled children and young people and the progressive removal of barriers to learning and participation in mainstream education. The Children and Families Act 2014 secures the general presumption in law of mainstream education in relation to decisions about where children and young people with SEN should be educated and the Equality Act 2010 provides protection from discrimination for disabled people.
>
> 1.27 Where a child or young person has SEN but does not have an EHC plan they must be educated in a mainstream setting except in specific circumstances [set out in Section 1.29]". (DfE, 2015, p25)

There is therefore a dual focus on *placement* ("the general presumption in law of mainstream education") and on access to the *academic and social* aspects of mainstream education ("the progressive removal of barriers to learning and participation in mainstream education"). In later chapters, the Code also clearly articulates a third focus, the entitlement to a *high-quality education*: "One that is appropriate to [pupil] needs, promotes high standards and the fulfilment of potential." (DfE, 2015, p92). In highlighting the tension between "rights" and "efficacy" in relation to a commitment to inclusive education, Lindsay (2003) argued for just such, "a dual approach focusing on both the rights of children and the effectiveness of their education" (p10). Special schools and special provision in mainstream schools remain part of the overall school system in England because of a

concern to maintain the right to an effective education for every pupil and to retain an element of parental choice.

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5.2 How is inclusion defined by both practitioners and researchers?

5.2.1 Overview of findings

We found one systematic review that addressed how researchers define inclusion (Göransson & Nilholm, 2014). These authors presented a hierarchical typology of inclusion definitions across four categories where Category B presupposes Category A, Category C presupposes Categories B and A and so on (p268): These define inclusion as:

> A. “placement of pupils with disabilities/in need of special support in general education classrooms”
>
> B. “meeting the social/academic needs of pupils with disabilities/pupils in need of special support” [in general education classrooms]
>
> C. “meeting the social/academic needs of all pupils” [in general education classrooms]
>
> D. “creation of communities with specific characteristics”, such as “equity, care, […], justice, honouring of subjugated knowledge and valuing diversity” [in mainstream schools and general education classrooms], (p270)

We were able to use this typology to categorise the way both researchers (19 systematic reviews) and practitioners (one systematic review) defined inclusion. The

typology does not reflect the reality of current practice in England, however. While a *commitment* to inclusion, as defined in Categories A and B and, to a certain extent, Category C, are reflected in English education law, policy and guidance so, too, is the continued co-existence of special schools and of specialist provision within mainstream schools. These specialist settings are designed to meet the needs of the "minority" (referred to in the Salamanca World Statement) for whom inclusion in mainstream schools may not be associated with effective educational outcomes.

Strength of evidence: Low (theory-based typology)

Relevance to England's mainstream schools: High

5.2.2 Further details of findings

Systematic review evidence about researcher definitions is presented first; then the evidence relating to practitioner definitions.

Researcher definitions of inclusion

We found one systematic review (Göransson & Nilholm, 2014) that set out to discover (as one of three research questions), "What definitions of inclusive education are used in research about inclusion?" (p266).

Their conceptual analysis of inclusion definitions is set out in Figure 17

Figure 17 Different types of definition of inclusion, as used in research about inclusion, and their hierarchical relations by Göransson & Nilholm (2014, p268)

Category	Definition
(A) Placement definition	inclusion as placement of pupils with disabilities/in need of special support in general education classrooms
(B) Specified individualised definition	inclusion as meeting the social/academic needs of pupils with disabilities/pupils in need of special support
(C) General individualised definition	inclusion as meeting the social/academic needs of all pupils
(D) Community definition	inclusion as creation of communities with specific characteristics (which could vary between proposals)
"The categories relate hierarchically to each other in the sense that category D presupposes categories C, B and A, and category C presupposes categories B and A, and so on […]. In this way, the four definitions can be seen as employing stricter criteria concerning what counts as inclusive education as one goes from definition A to D." (p268)	

Source: Göransson & Nilholm (2014, p268)

We then located the definition of inclusion used, or implied, in each of the 19 other systematic reviews we had identified in our 2000-2019 literature search for this chapter (not all of which were used for any other purpose). An **Appendix** to this chapter sets out these definitions in date order, and shows our (tentative) mapping of these onto the Göransson & Nilholm (2014) categories. In summary, we found that, following our assessment, all 19 of the systematic reviews we identified as relevant for this chapter defined inclusion in terms that mapped on to categories A, B or C of the Göransson & Nilholm (2014) categories. None mapped clearly on to their Category D: inclusion (the creation of communities with specific characteristics, such as equity, justice, valuing diversity). This reflects Göransson & Nilholm's own finding of a, "lack of empirical evidence concerning how [inclusive] communities are to be established" (p276) (as opposed to *advice* about this)[3].

Göransson & Nilholm (2014) state that:

> "[…] we regard inclusion as **an idea about what school systems, schools and classrooms should accomplish**, and as such, an expression of educational philosophy, which should be analysed accordingly. We believe that different understandings of inclusion should be seen, to a large extent, as expressions of different views of what schools should accomplish" (p.266; emphasis added)

They argue that thinking about inclusion in this way makes it, "to a large extent a political issue" (p275). They argue that the role of researchers should be to, "strive to find ways in which **the level of inclusion established as a goal for a particular education system** can be achieved" (p275, emphasis added). At the same time, they recognise that educational philosophy has always had a role in seeking, "to establish new ideals for school systems" (p276), and suggest that the category D definition of inclusion, which has the creation of certain types of communities as its goal, falls into this category of endeavour.

Our tentative mapping of researcher definitions (see Appendix) is used in Section 2 of this chapter to answer our second research question relating to inclusion: What impact do different variants of inclusion have on pupil outcomes?

Practitioner definitions of inclusion

We found no systematic reviews substantially focused on practitioner definitions of inclusion. Roberts & Simpson (2016), in their review of stakeholder perspectives on inclusion of students with autism, report on the *attitudes* to inclusion of educational professionals (p1086 & p1088). From this, a tentative 'mapping' onto the Göransson & Nilholm (2014) definition categories can be made (see Figure 18).

[3] A later article by the same authors (Nilholm & Göransson, 2017) also found a "conceptual divide" (p447) between definitions of inclusion in empirical articles versus positional articles.

Figure 18 Educational professionals' perceptions of inclusion for pupils with autism, reported by Roberts & Simpson (2016)

Education professionals' perceived inclusion as:	Number of cited studies (reporting educational professionals' views)	Primary/secondary phase/s of education (and countries) from which evidence is drawn	Placement in Göransson & Nilholm (2014) categories
"adaption of the learning environment to meet the child's needs" (p1086)	2	Both (UK, USA)	B. Specified individualised
"school commitment and willingness to accept students" (p1086)	1	(Local authority workers)	B. Specified individualised
Beneficial to "students with autism, their peers and teachers"	3	Both (UK, USA, Turkey)	C. General individualised; possibly D. Community
Students with autism gain academic opportunities; all students benefit from "use of class-wide strategies to address behaviour and social issues" (p1088)	1	Primary (USA)	C. General individualised

The information summarised in Figure 18 suggests that, based on systematic review evidence, educational professionals may define inclusion as more than simply placing pupils with SEN in mainstream schools and classes but as something less that the broad community definition, labelled as Category D in the Göransson & Nilholm (2014) typology.

Hutzler, Meier, Reuker and Zitomer (2019) focused on physical education (PE) teachers' *attitudes* to inclusion of children with disabilities. However, their analysis of the contextual variables influencing PE teachers' attitudes and self-efficacy about teaching pupils with disabilities did *not* include the influence of a teacher's own definition/understanding of inclusion and so was not relevant to answering the review question.

5.2.3 Evidence base for findings

The evidence base for the Göransson & Nilholm (2014) typology of researcher definitions of inclusion is based on an iterative process informed by a "purposeful sampling of research literature" (p266), analysis of prior reviews of inclusion (p267) and a systematic review of literature (p267) that resulted in identifying 20 empirical studies within the date range of 2004-20012 (pp273-275). The included empirical studies did not have to be of any particular research design other than to report results of a relevant process over time. The evidence for how educational practitioners define inclusion was more limited. The one systematic review we drew on, Roberts & Simpson's 2016 review of stakeholder perspectives, was based on 23 studies all focused on inclusive practices for pupils with autism.

Figure 19 Strength of evidence summary: researcher and practitioner definitions of inclusion

Dimension	Details
Place on development of theory to evidence-based practice line	Theory (typology of definition categories A - D).
Number of SRs showing relevant results	2
Precision of these results	[not applicable – qualitative synthesis]
Quality of the SRs as SRs (CASP)	Good enough – some weaknesses
Total number of included studies	43
Total number of relevant participants	>1201 (Not reported in one systematic review)
Study designs of included studies	Qualitative; literature reviews; empirical studies.
Quality assurance of included studies	Peer-reviewed journals only.
Judgement	Low

Figure 20 provides a structured summary of the two key systematic reviews drawn upon in this sub-section.

Figure 20 Systematic reviews relevant to RQ 2.1: How is inclusion defined by both practitioners and researchers?

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Goransson	2014	"1) what definitions of inclusive educatin are used in research about inclusion? 2) what can be learned, conceptually and empirically, about inclusive education from prior reviews? 3) given a strict definition of inclusion, what results emerge from empirical studies regarding factors that promote inclusion?" (p.266)	2004 to 2012 (plus identified prior reviews)	"we further limited our search to include only peer-reviewed material" (p.267)	**Can't tell** - some mentions of establishing validity of social and academic outcomes but not described in detail for commentary	"four quite different inclusion concepts were discerned in the literature […] the review of research yielded only one study that established a reliable and valid manner factors that increase the inclusiveness of schools and/or classrooms" (p.275)	20 out of 20	NR	NR	NR

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Roberts	2016	"to construct an understanding of stakeholder perspectives on how inclusive practices for students with autism are applied to practice" (p1085)	January 2004–July 2015.	"Semi-structured interviews were the predominant method of data collection, used in 10",p1086	Focused on peer-reviewed journals, p1085	"Education professionals, in both the UK and USA, and parents surveyed in the UK generally held positive attitudes about the inclusion of students with autism", p1086.	23	1,201: 75 students with autism (4 primary, 41 secondary), 30 adults providing retrospective data on their school experience; 347 parents of students with autism; 749 education professionals (p1086).	Some (number not specified)	Some (number not specified)

5.2.4 Relevance of available evidence to England's mainstream schools

The evidence presented concerning the nested structure of ways in which inclusion is defined is highly relevant to staff in mainstream schools in England. The nested aspect (by which Category C includes Categories A and B; Category B includes Category A etc.) is a helpful way of thinking about the law and guidance set out in the *SEND Code of Practice* (DfE, 2015). It could also be a useful way of reflecting on a school's (or local authority's/Academy Trust's) own attitudes, beliefs, policies and practices.

On the other hand, the typology does not reflect the reality of the English system in which special schools and specialist settings co-exist with mainstream settings. England has an inclusive **system** in that all children have the right to access education but not all are educated in mainstream settings. The Salamanca World Statement recognises that inclusive education understood as 'education in mainstream settings' will not be effective for every pupil (UNESCO, 1994, Paragraph 2, Clause 5). Lindsay (2003) highlighted the elision in the five clauses of Paragraph 2 of the Salamanca Statement. It moves from an assertion of every child's "fundamental right to education" (Paragraph 2, Clause 1) to a belief that education in "regular schools" was the way those with SEN "must" be educated (Clause 4), whilst acknowledging that this form of education would provide an "effective education to the majority of children" (Clause 5). No mention is made of the minority for whom it would not be an effective education. The effectiveness of inclusion in terms of pupil outcomes is the focus of Section 5.3.

The Roberts & Simpson (2016) review focuses only on pupils with autism. Most mainstream schools in England will have at least one pupil with autism and so the findings of that review are relevant.

Figure 21 Relevance to England's mainstream schools summary: researcher and practitioner definitions of inclusion

Dimension	Details
Relevance of participants in the studies	Yes – relevant to primary and secondary schools but note that one systematic review is about pupils with autism only
Relevance of the research questions of the SRs to mainstream schools	Yes
Relevance within England's legislative and Code of Practice context	Yes – to a useful extent
Relevance to the educational and external services delivery context in England	Yes
Judgement	Highly relevant

References

Systematic reviews (i) – used to answer RQ 2.1

Göransson, K., & Nilholm, C. (2014). Conceptual diversities and empirical shortcomings - a critical analysis of research on inclusive education. *European Journal of Special Needs Education, 29*(3), 265-280. doi:10.1080/08856257.2014.933545

Roberts, J., & Simpson, K. (2016). A review of research into stakeholder perspectives on inclusion of students with autism in mainstream schools. *International Journal of Inclusive Education, 20*(10), 1084-1096. doi:10.1080/13603116.2016.1145267

Systematic reviews (ii) – cited only

Hutzler, Y., Meier, S., Reuker, S., & Zitomer, M. (2019). Attitudes and self-efficacy of physical education teachers toward inclusion of children with disabilities: a narrative review of international literature. *Physical Education and Sport Pedagogy, 24*(3), 249-266. doi:10.1080/17408989.2019.1571183

Systematic reviews (iii) – used to map inclusion definitions on to Göransson & Nilholm (2014) categorisations (See Appendix)

Anaby, D. R., Campbell, W. N., Missiuna, C., Shaw, S. R., Bennett, S., Khan, S., . . . Golds. (2019). Recommended practices to organize and deliver school-based services for children with disabilities: A scoping review. *Child: Care, Health and Development, 45*(1), 15-27. doi:10.1111/cch.12621

Chae, S., Park, E. Y., & Shin, M. (2019). School-based Interventions for Improving Disability Awareness and Attitudes Towards Disability of Students Without Disabilities: A Meta-analysis. *International Journal of Disability Development and Education, 66*(4), 343-361. doi:10.1080/1034912x.2018.1439572

Chaffee, R. K., Briesch, A. M., Johnson, A. H., & Volpe, R. J. (2017). A meta-Analysis of class-wide interventions for supporting student behavior. *School Psychology Review, 46*(2), 149-164. doi:10.17105/SPR-2017-0015.V46-2

De Vroey, A., Struyf, E., & Petry, K. (2016). Secondary schools included: a literature review. *International Journal of Inclusive Education, 20*(2), 109-135. doi:10.1080/13603116.2015.1075609

Evans, J., Harden, A., & Thomas, J. (2004). What are effective strategies to support pupils with emotional and behavioural difficulties (EBD) in mainstream primary schools? Findings from a systematic review of research. *Journal of Research in Special Educational Needs, 4*(1), 2-16. doi:http://dx.doi.org/10.1111/J.1471-3802.2004.00015.x

Falkmer, M., Anderson, K., Joosten, A., & Falkmer, T. (2015). Parents' Perspectives on Inclusive Schools for Children with Autism Spectrum Conditions. *International*

Journal of Disability Development and Education, 62(1), 1-23. doi:10.1080/1034912x.2014.984589

Garrote, A., Sermier Dessemontet, R., & Moser Opitz, E. (2017). Facilitating the social participation of pupils with special educational needs in mainstream schools: A review of school-based interventions. *Educational Research Review, 20*, 12-23. doi:10.1016/j.edurev.2016.11.001

Gidlund, U. (2018). Teachers'attitudes towards including students with emotional and behavioural difficulties in mainstream school: A systematic research synthesis. *International Journal of Learning, Teaching and Educational Research, 17*(2), 45-63. doi:10.26803/ijlter.17.2.3

Hutzler, Y., Meier, S., Reuker, S., & Zitomer, M. (2019). Attitudes and self-efficacy of physical education teachers toward inclusion of children with disabilities: a narrative review of international literature. *Physical Education and Sport Pedagogy, 24*(3), 249-266. doi:10.1080/17408989.2019.1571183

Kalambouka, A., Farrell, P., Dyson, A., & Kaplan, I. (2007). The impact of placing pupils with special educational needs in mainstream schools on the achievement of their peers. *Educational Research, 49*(4), 365-382. [not this version]doi:http://dx.doi.org/10.1080/00131880701717222

Kurniawati, F., De Boer, A. A., Minnaert, A., & Mangunsong, F. (2014). Characteristics of primary teacher training programmes on inclusion: a literature focus. *Educational Research, 56*(3), 310-326. doi:10.1080/00131881.2014.934555

Leuders, J. (2016). Tactile and acoustic teaching material in inclusive mathematics classrooms. *British Journal of Visual Impairment, 34*(1), 42-53. doi:10.1177/0264619615610160

Nowicki, E. A. (2003). A meta-analysis of the social competence of children with learning disabilities compared to classmates of low and average to high achievement. *Learning Disability Quarterly, 26*(3), 171-188. doi:10.2307/1593650

Parsons, S., Guldberg, K., MacLeod, A., Jones, G., Prunty, A., & Balfe, T. (2011). International review of the evidence on best practice in educational provision for children on the autism spectrum. *European Journal of Special Needs Education, 26*(1), 47-63. doi:10.1080/08856257.2011.543532

Rix, J., Hall, K., Nind, M., Sheehy, K., & Wearmouth, J. (2009). What pedagogical approaches can effectively include children with special educational needs in mainstream classrooms? A systematic literature review. *Support for Learning, 24*(2), 87-94. doi:http://dx.doi.org/10.1111/j.1467-9604.2009.01404.x

Roberts, J., & Simpson, K. (2016). A review of research into stakeholder perspectives on inclusion of students with autism in mainstream schools. *International*

Journal of Inclusive Education, 20(10), 1084-1096. doi:10.1080/13603116.2016.1145267

Szumski, G., Smogorzewska, J., & Karwowski, M. (2017). Academic achievement of students without special educational needs in inclusive classrooms: A meta-analysis. *Educational Research Review, 21*, 33-54. doi:10.1016/j.edurev.2017.02.004

Walker, V. L., Chung, Y. C., & Bonnet, L. K. (2018). Function-Based Intervention in Inclusive School Settings: A Meta-Analysis. *Journal of Positive Behavior Interventions, 20*(4), 203-216. doi:10.1177/1098300717718350

Watkins, L., Ledbetter-Cho, K., O'Reilly, M., Barnard-Brak, L., & Garcia-Grau, P. (2019). Interventions for students with autism in inclusive settings: A best-evidence synthesis and meta-analysis. *Psychological Bulletin, 145*(5), 490-507. doi:10.1037/bul0000190

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Nilholm, C. & Göransson, K. (2017). What is meant by inclusion? An analysis of European and North American journal articles with high impact. *European Journal of Special Needs Education*, *32*(3), 437-451. doi: 10.1080/08856257.2017.1295638

5.3 What impact do different variants of inclusion have on pupil outcomes?

5.3.1 Overview of findings

One recent meta-analysis addressed this question from the point of view of the impact of inclusion on pupils without SEN: Szumski, Smogorzewska & Karwowski (2017) brought together data from 47 studies from seven countries (mainly the USA but also Canada and five Western European countries, including the United Kingdom). They concluded that there was a weak but positive impact on academic outcomes of pupils without SEN from having pupils with SEN included in their classes. That is, the variant of inclusion examined was 'pupils with disabilities in need of specialist support [equivalent to SEN in England] placed in mainstream schools/classes' (Category A on the Göransson & Nilholm (2014) typology).

There was a lack of systematic review evidence on the impact of any variant of inclusion on academic outcomes for pupils with SEND. One systematic review examined the impact of inclusion on the social competence of pupils with 'learning disabilities' [USA term broadly equivalent to 'specific learning difficulties' (SpLD) in England] (Nowicki, 2003). This used the definitional variant, 'meeting the social/academic needs of all pupils' (Category C on the Göransson & Nilholm (2014) typology). It found that pupils with learning disabilities [SpLD in England] experienced a similar level of 'social risk' to their low-attaining peers, and both these groups had higher risk compared to average to high-achieving classmates.

Strength of evidence: High (for academic impact on pupils without SEN); **Medium** (for impact on social competency of pupils with SpLD); **Missing** (for academic impact for pupils with SEND).

Relevance to England's mainstream schools: High

5.3.2 Further details of findings

We first present systematic review evidence about the impact of inclusion for pupils without SEND and then that for pupils with SEND.

Impact of inclusion on outcomes for pupils without SEND

Although our population inclusion criteria focused on pupils with SEND, we made an exception in order to include the most recent systematic review that examined the impact of inclusion on academic outcomes for pupils *without* SEN (Szumski, Smogorzewska & Karwowski, 2017). We did this because we thought this would be useful information for mainstream school staff potentially in countering concern about adverse effects of inclusion on pupils without SEND. The Szumski et al. (2017) review found that:

> "The effects we obtained - both the main effect and the results of moderator analysis - consistently support the concept of inclusive education, understood as effective school for all[4]." (p47)

This concept of inclusion – effective school for all – equates to the Göransson & Nilholm (2014, p268) Category C definition: "inclusion as meeting the social/academic needs of all pupils".

From their overall analysis (using a random effects model), they reported, "a positive and significant, though weak [*d* = 0.12], effect of the presence of students with SEN on the academic achievement of their peers without SEN" (p43). They argue that, although this is a small effect size, it should not be discounted:

> "The effect size of *d* = 0.12 shows that the achievement of students without SEN in inclusive classrooms is only slightly better (the difference is equivalent to 2 points on a scale with a mean of 100 and a standard deviation of 15 points) than the achievement of their peers in non-inclusive classrooms. Nevertheless, this result must not be disregarded as the effectiveness of few interventions and strategies in education is high, particularly if they concern the school level or the school system rather than instruction strategies (Hattie, 2009[5]; Hattie & Yates, 2014[6]). For example, the effect size of factors such as educational expenditure (*d* = 0.23), class size (*d* = 0.21), ability grouping (*d* = 0.12), or within-class grouping (*d* = 0.16) is similar (Hattie, 2009) even though there is a firm and deeply rooted belief in their influence on the quality of education in schools." (p47).

They also reported the results of moderator analyses. The most relevant of these to school staff in England are that:

> "[…] on average the presence of learners with EBD [emotional and behavioral disorders] and severe SEN in a classroom does not negatively influence the achievement of their peers without SEN. Still, neither does it influence their achievement positively, […]" (p49)

> "[…] we found no significant differences between effects from the three educational stages [elementary education, lower and upper secondary education]." (p49).

In short, the Szumski et al. (2017) systematic review found a significant positive effect on academic outcomes of pupils without SEN in inclusive classrooms, versus their peers in non-inclusive classrooms (when 'inclusive' was defined as containing pupils with SEN).

Impact of inclusion on pupils with SEND

We found very little evidence from systematic reviews within our date range (2000-2019) that addressed the question of the impact of any variants of inclusion on

[4] As their source for this concept, they reference Ainscow, M., Dyson, A., Goldrick, S. & West, M. (2012). Making schools effective for all: rethinking the task. *School Leadership and Management: Formerly School Organisation*. 32, 197-213.

[5] Hattie, J. (2009). *Visible learning: a synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.

[6] Hattie, J. & Yates, G. *Visible learning and the science of how we learn*. London: Routledge.

outcomes for pupils with SEND. This may be because it is difficult to research and/or because the topic is regarded by some as inappropriate to research; as a rights-based issues, some regard commitment to implementation as the necessary ingredient, not evidence of effectiveness – Lindsay (2007) makes this point. Göransson & Nilholm (2014) argue that it is only when inclusion is defined as placement in a mainstream setting (their Category A: Placement) that such a research question can be addressed:

> "It is only when inclusion is defined as the placement of pupils with disabilities in mainstream classrooms, i.e. as a method, that it becomes reasonable to ask what effects inclusion gives rise to in terms of social/academic outcomes for pupils or the quality of the educational environment." (p269)

The only systematic review included in our review that adopted this Category A definition of inclusion *and* that provided any relevant evidence was one focused only on pupils with autism. A review of best practice in educational provision for children on the autism spectrum (Parsons, Guldberg, MacLeod, Jones, Prunty & Balfe, 2011) reported a **lack** of research examining the relative pupil outcomes for pupils with autism depending on whether or not the pupils were in mainstream settings or in separate special setting. They located no evidence either way: "[we found] no evidence to favour special/ist over mainstream provision or *vice versa*." (p58).

One other systematic review (Nowicki, 2003), adopting a different definition of inclusion – meeting the social/academic needs of all pupils (i.e. Göransson & Nilholm (2014) Category C. General individualised) – compared the social competence outcomes of three groups: pupils with 'learning disabilities' [equivalent to SpLD in England], those with low achievement, and those with average to high achievement. Nowicki (2003) found that both pupils with 'learning disabilities' and their low-achieving peers, "experienced more social difficulties than their average to high-achieving classmates" (p186).

> "Learning disabilities [SpLD in England] do not appear to put children at an appreciably greater social risk than children designated as low achieving, however. That is, effect sizes for self-perceptions of scholastic performance and global self-worth were not reliably different from zero, indicating both groups of children had lower scores on these measures than their [average to high-achieving] classmates." (p185)

The overall finding reflected perceptions of both teachers and average to high-achieving peers: "teachers perceived pupils with learning disabilities [SpLD in England] to be lacking in social skills compared to peers who were attaining at least an average level of academic achievement" (p185). The meta-analysis also found that, "children much preferred classmates without learning disabilities [SpLD]" (p185) and that:

> "an appreciable proportion of students with learning disabilities [SpLD] seem to be rather oblivious of their poor social acceptance by their classmates. Yet,

> the majority of these students appeared to be well aware of their poor scholastic abilities, and tended to have low self-evaluations of their global self-worth" (Nowicki, 2003, p.185)

In terms of recommendations for practice, Nowicki (2003) used the results of her meta-analysis to suggest that:

> "Educators need to be aware that children who are struggling academically may also be experiencing social difficulties with their classmates, and may have lower self-esteem with regard to academic tasks. Thus, children with learning difficulties [SpLD in England], regardless of a formal designation of having a learning disability or of low academic achievement, may require social support as much as they require academic remediation" (Nowicki, 2003, p.186)

The Nowicki (2003) suggestion fits well with one of the high leverage practices recommended in the Centre for Exceptional Children/CEEDAR report (McLeskey et al., 2017) – see Figure 22.

Figure 22 Teaching social behaviour as a high leverage practice (McLeskey et al., 2017)

HLP9	**Teach social behaviors**
"Teachers should explicitly teach appropriate interpersonal skills, including communication, and self-management, aligning lessons with classroom and school-wide expectations for student behavior. Prior to teaching, teachers should determine the nature of the social skill challenge. If students do not know how to perform a targeted social skill, direct social skill instruction should be provided until mastery is achieved. If students display performance problems, the appropriate social skill should initially be taught, then emphasis should shift to prompting the student to use the skill and ensuring the "appropriate" behaviour accesses the same or a similar outcome (i.e., is reinforcing to the student) as the problem behavior."	

Source: McLeskey et al. (2017, p59)

Although not directly relevant to our review question, in light of the Nowicki (2003) findings reported and the McLeskey et al. (2017) recommendation to 'teach social behaviours', it is interesting to note that a recent systematic review (Garrotte, Dessemontet & Opitz, 2017) gathered together the evidence on school-based interventions to facilitate social participation of pupils with special educational needs in mainstream schools. This found positive effects from teaching social interaction skills through four different types of intervention, with teaching social interaction skills to 'typically developing' peers in primary schools having the strongest evidence:

> "Based on the findings of this review, teaching social interaction skills to TD [typically developing] pupils in preschool and primary school classrooms is

well documented and can be considered as an evidence-based intervention[7] to improve social interactions among pupils with ASD [autism spectrum disorders], BD [behavioural difficulties], DD [developmental delay], and ID [intellectual disability] and their TD peers. Indeed, several methodologically thorough studies revealed positive effects and reported medium to large effect sizes." (Garrotte *et al*.,2017, p39)

The three other types of intervention which, "seem[ed] to be effective, even if they are not yet sufficiently documented by methodologically thorough studies to be considered evidence-based according to the criteria from the Council for Exceptional Children (2014)" [see Footnote 7 for reference]. These were:

- "group activities in the academic context, namely cooperative learning and peer tutoring";
- "regularly implemented support group meetings (i.e., "Circles of Friends")";
- "training and coaching paraprofessionals" (this last only had evidence relating to pupils with ASD. (Garrotte *et al*.,2017, p39).

Chapter 8 on high quality teaching provides further evidence on effective teaching for pupils with SEND in mainstream schools.

Overall, however, in terms of the specific research question, 'What impact do different variants of inclusion have on pupil outcomes?', the systematic review evidence is largely lacking. Although we excluded the Lindsay (2007) review from this present evidence review (because it was limited to articles in eight special education journals during 2000-2005), it is interesting to note that it, too, reported an equivocal finding (not specific to any variant of inclusion): "a lack of firm research base for inclusive education […] in terms of outcomes" (p16).

5.3.3 Evidence base for findings

The evidence summarised above addressed our research question from three different angles and so is not cumulative. From the two meta-analyses that reported findings, the evidence is strong that being taught in inclusive classrooms has a small positive impact overall, especially at primary school, on those without SEN and of medium strength that inclusion in mainstream schools is no worse socially than being a low achieving pupil for pupils with SpLD ['learning disabilities' in USA].

The evidence on the impact of inclusion (however defined) on the academic outcomes of pupils with SEND is lacking at systematic review level.

The Szumski et al. (2017) meta-analysis was based on 47 studies involving around 4.8 million pupils. Included studies were subjected to quality appraisal. The authors argue that:

[7] This means evidence-based according to the criteria set by the *Council for Exceptional Children* (2014). Standards for evidence-based practices in special education. Teaching Exceptional Children. 46(6), 206-212.doi.org/10.1177/0040059914531389

> "The effectiveness of inclusive education in high schools certainly requires future research as, to date, studies concerning inclusive education at lower educational stages have predominated." (p49)

Systematic review evidence about academic outcomes for pupils with SEND was lacking, including for pupils with autism (Parsons et al., 2011).

One meta-analysis (Norwicki, 2003) examined social competence of pupils with 'learning disabilities' [SpLD in England]. This was based on 32 peer-reviewed studies involving over 6500 pupils.

Figure 23 Strength of evidence summary: impact of variants of inclusion on pupils

Dimension	**Details**
Place on 'development of theory' to 'evidence-based practice' line	Inclusion has been put into practice on a large scale. The evidence indicates: (i) a small positive impact on pupils without SEN, especially at primary school level (strong); (ii) a lack of systematic review evidence about the impact on academic outcomes for pupils with SEND (missing); (iii) that social competence of pupils with learning disabilities [SpLD] in mainstream schools is no different to that of low-achieving peers (medium).
Number of SRs showing positive results	1 of 3 (but each addressed a different aspect of our RQ)
Precision of these results	Different in each of the 3 SRs
Quality of the SRs as SRs (CASP)	Varied but all good enough to use
Total number of included studies	122
Total number of relevant participants	Over 4.8 million
Study designs of included studies	Different in each of the 3 SRs
Quality assurance of included studies	Yes in 2 SRs; peer-review only in 3rd.
Judgement	**High** for academic outcomes of pupils without SEN, especially in primary schools; **Medium** for social competence of pupils with SpLD included in mainstream schools. **Missing** for academic impact on pupils with SEND.

Figure 24 provides a structured summary of the three systematic reviews drawn on to address our research question.

Figure 24 Systematic reviews relevant to RQ: What impact do variants of inclusion have on pupil outcomes?

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					**CASP- SR Quality of article**					
Szumski	2017	"To what extent do students without special educational needs (SEN) who are taught together with classmates with SEN, achieve academically more or less than when taught in homogeneous classes". p34.	1980 - 2013	"the study had to involve between-group comparisons, that is, cross-sectional (one measurement) or longitudinal (several measurements), or to be part of a one-group longitudinal design", p39	Yes, used assessment criteria (Dalemans et al, 2008).: 15 items related to 3 aspects - informativity, external validity, and internal validity, p40. All studies rated 12-14.	"attending inclusive classrooms is positively, though weakly, associated with the academic achievement of students without SEN", p49.	47 (Table 1, p41)	Around 4.8 million (Table 1, pp41-42)	>4,615,823	>113, 134

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					**CASP- SR Quality of article**					
Parsons	2011	"a review of the international literature on best practice ineducational provision for children and young people on the autism spectrum", p48-49.	June 2002 - November 2008	Empirical research that included individual or group outcomes for children on the autism spectrum, plus published expert opinion or professional experience (p49)	Yes (EPPI-Centre criteria of weight of evidence)	"Both the empirical and expert strands of evidence highlighted the importance of early intervention [...] focused on early communicative behaviours [...and on] intensive behavioural techniques [...] a range of interventions should continue to be funded and provided for families" p58.	43 of 100	NR	NR (some studies)	NR (some studies)

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Nowiki	2003	"The purpose of the current meta-analysis was to summarize later research addressing the social competence of children with learning disabilities in comparison to two groups of classmates: a) those designated as low in academic achievement and b) those classified as average to high academic achievement"	"1990 onwards" (p.173)	"empirical comparisons of the social competence of children with leanring disabilities and children without disabilities enrolled in inclusive classrooms" (p.173)	Peer-reviewed. No quality assessment tool mentioned.	"pupils with learning disabilities experienced more social difficulties than their average to high-achieving classmates but not appreciably more so than children designated as low in achievement. Further, children with learning disabilities and those designated as low in scholastic achievement did not substantially differ in self-worth [...] moreover, [these groups] appeared to lack adequate self-perceptions of their social acceptance" (p.186)	32	6,952	c. 6,131 (28 studies)	c. 821 (4 studies)

5.3.4 Relevance of available evidence to England's mainstream schools

The Szumski et al. (2017) meta-analysis was based on studies of the academic impact on pupils *without* SEN of inclusive classrooms in America, Canada, Germany, Switzerland, Austria, The Netherlands and the United Kingdom. The majority of studies were from the USA. It analysed data on over 4.8 million pupils, with the majority from primary school or equivalent but still with a large number (over 113,000) from secondary schools or equivalent. The positive evidence was stronger for primary schools than for secondary schools but the findings for secondary schools were not negative.

The Nowicki (2003) meta-analysis on social competence of pupils with 'learning disabilities' [SpLD in England] used data from over 6,500 pupils, with the majority from primary schools but also including over 800 secondary school pupils. The countries in which the studies were conducted was not reported (which suggests that they were predominantly American).

Figure 25 Relevance to England's mainstream schools summary: impact of variants of inclusion on pupil outcomes

Dimension	Details
Relevance of participants in the studies	Yes – mainly primary school pupils but both meta-analyses included pupils from secondary schools. Most studies were from North America but studies from Europe, including the UK, were incorporated in the Szumski et al. analyses. .
Relevance of the research questions of the SRs to mainstream schools	Yes
Relevance within England's legislative and Code of Practice context	Yes
Relevance to the educational and external services delivery context in England	Yes
Judgement	**High**

References

Systematic reviews (i) - used to answer RQ 2.2

Nowicki, E. A. (2003). A meta-analysis of the social competence of children with learning disabilities compared to classmates of low and average to high achievement. *Learning Disability Quarterly, 26*(3), 171-188. doi:10.2307/1593650

Parsons, S., Guldberg, K., MacLeod, A., Jones, G., Prunty, A., & Balfe, T. (2011). International review of the evidence on best practice in educational provision for children on the autism spectrum. *European Journal of Special Needs Education, 26*(1), 47-63. doi:10.1080/08856257.2011.543532

Szumski, G., Smogorzewska, J., & Karwowski, M. (2017). Academic achievement of students without special educational needs in inclusive classrooms: A meta-analysis. *Educational Research Review, 21*, 33-54. doi:10.1016/j.edurev.2017.02.004

Systematic reviews (ii) - cited only

Göransson, K., & Nilholm, C. (2014). Conceptual diversities and empirical shortcomings - a critical analysis of research on inclusive education. *European Journal of Special Needs Education, 29*(3), 265-280. doi:10.1080/08856257.2014.933545

Garrote, A., Sermier Dessemontet, R., & Moser Opitz, E. (2017). Facilitating the social participation of pupils with special educational needs in mainstream schools: A review of school-based interventions. *Educational Research Review, 20*, 12-23. doi:10.1016/j.edurev.2016.11.001

Other references

Lindsay, G. (2007). Educational psychology and the effectiveness of inclusive education/mainstreaming. *British Journal of Educational Psychology, 77*, 1-24.

McLeskey, J., Barringer, M-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., Lewis, T., Maheady, L., Rodriguez, J., Scheeler, M.C., Winn, J., & Ziegler, D. (2017). *High-leverage practices in special education.* Arlington, VA: Council for Exceptional Children and CEEDAR Center.

5.4 What is the evidence regarding inclusive responses to challenging behaviour?

5.4.1 Overview of findings

There is strong evidence that interventions using behavioural approaches can be effective as inclusive responses to challenging behaviour in mainstream classes. This is true for whole-class, targeted and individualised interventions and for promoting positive behaviour and addressing challenging behaviour.

These findings augment the EEF guidance on improving behaviour in schools (Rhodes & Long, 2019).

Strength of evidence: high

Relevance to England's mainstream schools: high

5.4.2 Further details of findings

We found systematic review evidence that both whole-class approaches and targeted interventions (small group and individualised) can be effective as inclusive responses to challenging behaviour in mainstream schools. Each of the effective interventions were based on a behavioural approach.

Class-wide interventions in mainstream schools

Chaffee, Briesch, Johnson & Volpe (2017) conducted a systematic meta-analysis of single case design research on "class-wide interventions to address student behavior in the general education environment" (p151). They reported that:

> "Results indicate that class-wide, behaviorally oriented interventions are highly effective at improving student behavior in general education settings. The estimates obtained using both Tau-U (0.93, 95% CI [0.87, 0.99]) and Hedges' *g* (2.04, 95% CI [1.67, 2.41])[8] consistently suggested a large overall estimate of effect. (p160)"

Not only were the overall results positive: *every* intervention showed positive results. Further descriptive details about these interventions are therefore included in Figure 26. Those marked * were additionally reported as meeting the Horner & Kratochwill (2012) criteria for evidence-based practice as, "class-wide interventions when applied to a range of students within general educational settings" (p160). These criteria were later adopted by the What Works Clearinghouse in version 4 of their Standards Handbook (What Works Clearinghouse, no date).

[8] Tau-U and Hedge's *g* are statistical measures of effect size. Tau-U is a nonparametric measures used to calculate effect sizes in single case design studies. Hedge's *g* is a parametric measure. **Tau-U**: large = above .70, moderate = .50 - .69, small = below .50. **Hedge's *g***: large = .80, moderate = .50, small = .20.

Figure 26 Descriptive characteristics of effective interventions included in the Chaffee et al.(2017) systematic review

Types of intervention (Number of studies)	**Characteristics**
Interdependent group contingencies	
*[9]Good Behavior Game[10] (n = 8)	"a type of interdependent contingency, which was coded as a unique configuration given its use of team competition. The GBG, originally introduced by Barrish et al. (1969), utilizes the forces of peer pressure, social reinforcement, and competition by splitting the class into teams. All members of the team access the same consequence based on collective group performance." (p155)
*Other types of interdependent group contingencies (n = 7)	"rewards for each member of the group are based on the performance of the group as a whole. Variations within this category included use of automatic feedback devices and randomized components." (p155)
Token economies (n = 3)	"the same contingency is used for all students but rewards are determined based on individual performance" (p155)
"Unique interventions", distinct from interdependent group contingencies	
Establishing clear expectations for student behaviour (n = 2)	"the Assertive Discipline program, which requires that teachers establish clear rules for student behavior as well as consequences for misbehaviour"; "the color wheel intervention, in which a tricolored wheel was used to help students differentiate between behavioral expectations at different times of the day. For example, red corresponded with the expectations for transitions, such as sitting quietly and looking at the teacher. In contrast, green corresponded with the expectations for free time, such as using indoor voices and respecting others' space." (p155)

[9] * Met the Horner & Kratochwill (2012) criteria for evidence-based practice as, "class-wide interventions when applied to a range of students within general educational settings" (p160).
[10] Barrish, H. H., Saunders, M., & Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis*, *2*, 119– 124. doi:10.1901/jaba.1969.2-119

Tootling[11]. (n = 2)	"classmates are encouraged to recognize and report peers' prosocial behavior. Each day, the teacher would establish a goal for the number of tootles produced and the class would receive a reward if the goal was collectively met" (p155)
Various multicomponent contingencies	"All multicomponent interventions involved an interdependent contingency that was either combined with dependent or independent group contingencies, self-monitoring, and/or peer feedback. For example, in a study by Crouch et al. (1985), the class was able to earn free time based upon appropriate student behavior (i.e., interdependent group contingency); however, individual students could also lose recess privileges for engaging in disruptive behavior (i.e., independent group contingency)." (p155)
Self-monitoring or peer-modeling strategies or a combination of these	
Self-monitoring	"all students rate their own behavior; however, they [can involve] different contingencies and levels of peer involvement" (p155)
Peer-modelling	"a peer video modeling intervention in which students watched a videotape depicting a peer model demonstrating high levels of on-task behavior."
On-Task in a Box[12] intervention	"incorporates video self-modeling, self-monitoring, and group contingency strategies in order to promote on-task behavior." (p158)
Class-wide peer tutoring	"Students formed groups of three, within which they would take turns serving as either the tutor, tutee, or observer. Tutors were encouraged to provide social reinforcement and appropriate feedback while the tutee worked to complete an assigned task." (p158)

Targeted interventions in mainstream schools

Effective targeted interventions were also underpinned by behavioural theory: concepts from applied behaviour analysis and associated technologies including functional behaviour assessment. The former evidence relates to pupils with autism; the latter to pupils with a range of 'disabilities' [equivalent to 'SEN' in England].

[11] Skinner, C. H., Skinner, A. L., & Cashwell, T. H. (1998). *Tootling, not tattling*. Paper presented at the twenty-sixth annual meeting of the Mid-South Educational Research Association, New Orleans, LA.
[12] Battaglia, A. A., Radley, K. C., & Ness, E. J. (2015). Evaluating the effects of on-task in a box as a class-wide intervention. *Psychology in the Schools*, *52*, 743–755. doi:10.1002/pits.21858

Watkins, Ledbetter-Cho, O'Reily, Barnard-Brak and Garcia-Grau (2019) conducted a best-evidence synthesis and meta-analysis of interventions for students with autism in 'inclusive settings', where inclusion was defined as "the placement of special education students in general education settings" (p492). All the interventions included:

> "[…] procedures based on the principles of applied behavior analysis, namely **prompting** (i.e., antecedent procedure to increase the likelihood that a specific behavior will occur; Wong et al., 2015), **modeling** (i.e., adult or peer demonstrations of a target behavior that should result in imitation of the behavior by the participant; Wong et al., 2015), **and/or reinforcement** (i.e., a consequence that increases the likelihood that a behavior will be performed again; Wong et al., 2015)." (Watkins et al., 2019, p500, emphasis added).

These interventions targeted different skill domains (challenging behaviour, classroom behaviour, social communication skills, play skills, restricted and repetitive behaviours). Picking out only the four studies, all in primary schools, that reported results of interventions targeted at challenging behaviour, these all showed large effect sizes (Tau-U above .70) and three of the four also showed large effect sizes on an alternative measure (NAP above .93), with the fourth study showing a moderate effect (NAP .66-.92)[13]. This is more positive than the overall conclusion of that systematic review that, "Results suggested that these interventions have generally produced moderate to large effects across skill domains, with the majority of interventions found to be socially valid in this setting." (p502)

Walker, Chung & Bonnet (2018) conducted a meta-analysis of single case design studies of function-based intervention (FBI) in inclusive mainstream classes (with 'inclusion' defined as "students with disabilities [SEN in England] access[ing] the general education curriculum", (p203). These interventions were based on the results of a functional behaviour assessment. Such an assessment involves identifying, "events or conditions that predict and maintain challenging behaviour and (b) develop[ing] a hypothesis of the potential function(s) of the behaviour" (p204). The overall results showed that: "FBI implemented in inclusive settings was found to have a positive effect on both challenging and appropriate behavior of students with disabilities [SEN in England]" (p208). The average NAP score was .86 for challenging behaviour and .90 for appropriate behaviour (top end of the 'moderate' range). The average Tau-U score was .86 for challenging behaviour and .90 for appropriate behaviour (large to very large effects). Moderator analysis showed that the effects were significantly more positive when the functional behaviour assessment was conducted by teachers (versus researchers or therapists); and when the intervention was implemented in the whole class setting (versus a small group setting). Both these moderator analyses underline the relevance of this

[13] Tau-U and nonoverlap of all pairs (NAP) are nonparametric measures used to calculate effect sizes in single case design studies. **Tau-U**: large = above .70, moderate = .50 - .69, small = below .50. **NAP**: large = above .93, moderate = .66- .92, small = below .65. (For reference: **Cohen's *d***: large = .80, moderate = .50, small = .20. **Pearson's *r***: large = .50, moderate = .30, small = .10) (Watkins et al., 2019, p497.

approach within mainstream school classes and with close attention to the educational context.

This Walker et al. (2018) review examined individualised interventions, conceptualised as equivalent to Tier 3 interventions within a multi-tiered system of School-Wide Positive Behavioural Interventions and Supports (SWPBIS). A SWPBIS system would also have Tiers 1 and 2 interventions operating at universal level and targeted level respectively (Figure 27).

Figure 27 Continuum of support typically offered in school-wide positive behavioural interventions and support (SWPBIS), as described in Walker et al. (2018, p203[14])

Level	Description
'Tier 1' or 'Primary' or 'Universal'	"All students in a school are taught school-wide behavioral expectations and receive reinforcement for engaging in expected behaviour"
'Tier 2' or 'Secondary' or 'Targeted'	"Students with at-risk behavior receive additional specialized, targeted group interventions that promote appropriate behaviour"
'Tier 3' or 'Tertiary' or 'individualised'	"Students with high-risk behavior receive specialized, individualized behavioral interventions"

The Walker et al. (2018) findings corroborate one of the high leverage practices (specifically HP10) in the McLeskey et al. (2017) report of high leverage practices in special education. The continuum of support they also discuss also relates well to two further high leverage practices. All three of these are set out for information in Figure 28.

Figure 28 High leverage practices in supporting behaviour (McLeskey et al., 2017)

HLP7	**HLP7 Establish a consistent, organized, and respectful learning**
"To build and foster positive relationships, teachers should establish age appropriate and culturally responsive expectations, routines, and procedures within their classrooms that are positively stated and explicitly taught and practiced across the school year. When students demonstrate mastery and follow established rules and routines, teachers should provide age-appropriate specific performance feedback in meaningful and caring ways. By establishing, following, and reinforcing expectations of all students within the classroom, teachers will reduce the potential for challenging behavior and increase student engagement. When establishing learning environments, teachers should build mutually respectful relationships with students and engage them in setting the classroom climate (e.g., rules and routines); be respectful; and value ethnic, cultural,	

[14] The authors cite as their source: Sugai, G., & Horner, R. (2006). A promising approach for expanding and sustaining school-wide positive behavior support. *School Psychology*, *35*, 245–259.

contextual, and linguistic diversity to foster student engagement across learning environments" (p56)	
HLP8	**Provide positive and constructive feedback to guide students' learning and behavior**
"The purpose of feedback is to guide student learning and behavior and increase student motivation, engagement, and independence, leading to improved student learning and behavior. Effective feedback must be strategically delivered and goal directed; feedback is most effective when the learner has a goal and the feedback informs the learner regarding areas needing improvement and ways to improve performance. Feedback may be verbal, nonverbal, or written, and should be timely, contingent, genuine, meaningful, age appropriate, and at rates commensurate with task and phase of learning (i.e., acquisition, fluency, maintenance). Teachers should provide ongoing feedback until learners reach their established learning goals." (p57)	
HLP10	**Conduct functional behavioural assessments to develop individual student behaviour support plans**
Creating individual behavior plans is a central role of all special educators. Key to successful plans is to conduct a functional behavioral assessment (FBA) any time behavior is chronic, intense, or impedes learning. A comprehensive FBA results in a hypothesis about the function of the student's problem behavior. Once the function is determined, a behavior intervention plan is developed that (a) teaches the student a pro-social replacement behavior that will serve the same or similar function, (b) alters the environment to make the replacement behavior more efficient and effective than the problem behavior, (c) alters the environment to no longer allow the problem behavior to access the previous outcome, and (d) includes ongoing data collection to monitor progress." (p60)	

Source: McLeskey et al. (2017, pp55-68)

Figure 29 provides a summary of the effective inclusive responses to challenging behaviour/effective ways of promoting positive behaviour covered in this Section. This updates earlier reviews, such as that by Evans et al. (2004) which reported that: "the evidence base for recommending effective strategies that teachers could draw on to support pupils with emotional and behavioural difficulties in mainstream classrooms is limited" (p7).

Figure 29 Effective inclusive responses to challenging behaviour or to promoting accepted behaviour in inclusive classrooms

Researcher-defined variant of inclusion[15]	Effective responses to challenging behaviour	Universal or targeted	Systematic review source
Category A: Placement in mainstream classes	Interdependent contingency interventions (i.e. consequences for whole team based on collective team behaviour); Independent group contingencies (i.e. where all work towards same reward but individual students can lose reward)	Universal (whole class)	Chaffee et al. 2017
Category A: Placement in mainstream classes	Interventions based on principles of applied behaviour analysis: i.e. prompting, modelling, and/or reinforcement	Targeted (pupils with autism)	Watkins et al., 2019
Category A: Placement in mainstream classes	"Behavioural interventions driven by the results of FBA [functional behaviour assessment]" (p204) – i.e. "where the evaluator (a) identifies events or conditions that predict and maintain challenging behaviour and (b) develops a hypothesis of the potential function(s) of the behaviour" (p204)	Individualised (pupils with disabilities) – delivered in whole group setting	Walker et al., 2018

5.4.3 Evidence base for findings

Overall, the systematic review evidence is strong that interventions based on applied behavioural approaches can be effective responses to challenging behaviour in inclusive settings. All three meta-analyses used the What Works Clearinghouse (no date) study design standards to assess the quality of included studies. Two reviews (Chaffee et al., 2017 and Watkins et al., 2019) *ex*cluded methodologically weak

[15] As described by the systematic review authors

studies to focus on rigor; Walker et al. (2018) *in*cluded them to avoid bias but then tested afterwards and, "found that study quality did not affect intervention outcomes" (p206). Although single case study designs are not deemed as strong a design as a random control trial, well-conducted studies are regarded as offering strong evidence that an intervention has been the cause of the observed changes in behaviour (Field & Hole, 2003, p93).

All three meta-analyses summarised above defined 'inclusion' in a way that could be mapped on to 'Category A. Placement', in the Göransson & Nilholm (2014) typology of definitions.

One of the three meta-analyses was specific to pupils with autism spectrum disorders (Watkins et al., 2019).

Figure 30 Strength of evidence summary: inclusive responses to challenging behaviour

Dimension	**Details**
Place on 'development of theory' to 'evidence-based practice' line	Some interventions met What Works Clearinghouse standards for evidence-based practice; others were moving towards that level of evidence
Number of SRs showing positive results	3
Precision of these results	Acceptable
Quality of the SRs as SRs (CASP)	Good
Total number of included studies	74
Total number of relevant participants	>815
Study designs of included studies	Single case design or (strong) group design
Quality assurance of included studies	Yes, all 3 used the WWC study design criteria. For different good reasons, Chaffee et al (2017) and Watkins (et al., 2019) excluded methodologically weak studies; Walker et al. (2018) included them.
Judgement	**High**

Figure 31 provides a structured summary of the three meta-analyses used to answer the research question: What is the evidence regarding inclusive responses to challenging behaviour?

Figure 31 Systematic reviews relevant to RQ: What is the evidence regarding inclusive responses to challenging behaviour?

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Chaffee	2017	" to provide a current comprehensive evaluation of the single case design research on the use of class-wide interventions to address student behavior in the general education environment. One goal of this study was to identify effective universal class-wide interventions that general education teachers could routinely use", p151.	Jan 1969 - Sept 2015.	single case design (p151).	Yes, used the What Works Clearing-house single case design criteria (Kratochwill et al., 2010), p151	"all of the interventions emphasized the use of strategies that are behavioral in nature (e.g., explicit teaching of behavior or reinforcement)", "Results indicate that class-wide, behaviorally oriented interventions are highly effective at improving student behavior in general education settings" p160..	24	>511, Table 1, Pp156-157	> 407 (24 studies) p155	> 104 pupils (4 studies), p155 & Table 1, Pp156-157

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Watkins	2019	"to identify intervention studies for students with ASD in inclusive classroom settings that meet minimum standards for methodological rigor." (p491)	1997 - 2017 (p491)	"an experimental research design (i.e., group design or single-case design [SCD]) that allowed for direct analysis of the effect of the intervention on participant behavior or skills" (p492)	YES. "the studies must have demonstrat-ed sufficient method-ological rigor according to the WWC standards for group design or SCD research (see WWC, 2014). " (p492)	"Overall, the results of this metaanalysis indicate that interventions for students with ASD have produced moderate to large effects and have demonstrated a sufficient level of social validity within inclusive school settings. Function-based interventions, visual supports, self-monitoring, and PMI [peer-mediated interventions] all produced large effects and should be considered recommended strategies for use with students with ASD in inclusive classrooms. " (p503)	23 (of 28) studies (82%), (Table 1, pp493-497)	259 (of 293) (88%), (Table 1, pp493-497)	251, (Table 1, pp493-497)	23, (Table 1, pp493-497)

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Walker	2018	"Research Question [RQ]1: What were the overall effects of FBI [function-based intervention] on challenging and appropriate behavior? RQ 2: Did any of the study characteristics moderate intervention outcomes? RQ 3: What were the characteristics of study participants, settings, and FBI applied within the studies? RQ 4: What was the overall quality of the reviewed studies?", p205	1994 - 2014	"The study utilized an experimental single-case research design (i.e., multiple baseline and probe designs, reversal and withdrawal designs, and comparative intervention designs with three or more data points in the initial control phase", p205	Yes, assessed external validity and social validity & applied the WWC standards (WWC; Kratochwill et al., 2010), p213	Overall, FBI implemented across student participants with different disabilities and within a variety of inclusive school settings resulted in moderate to strong intervention effects, suggesting that FBI can be effective and feasible in inclusive settings [...], even for students with the highest priority behavior (e.g., physical aggression, self-injury) or who have more significant disabilities (e.g., intellectual disability, autism)." (p210)	27	45 students	20 - primary school, 14 - early childhood, p209.	7 - middle school, 2 - high school, p209

5.4.4 Relevance of available evidence to England's mainstream schools

Both the Chaffee et al. (2017, p155) and the Watkins et al. (2019, p503) reported that almost all (over 90%) of included studies were from the United States of America. Walker et al. (2018) did not report the countries of included studies – which makes it likely that the majority were from the USA. Although the educational context is different in the USA compared to England, there are likely to be enough similarities in inclusive classroom contexts in mainstream schools for the findings to be relevant to English mainstream schools.

Figure 32 Relevance to England's mainstream schools summary: inclusive responses to challenging behaviour

Dimension	Details
Relevance of participants in the studies	All three systematic reviews (SRs) included pupils in primary and in secondary schools.
Relevance of the research questions of the SRs to mainstream schools	Yes - all focused on mainstream classes in mainstream schools
Relevance within England's legislative and Code of Practice context	Yes - The vast majority of the data were from the USA but inclusion is a key part of law and guidance in England too
Relevance to the educational and external services delivery context in England	Yes - enough similarities in inclusive classroom contexts in USA to be relevant to England
Judgement	High

References

Systematic reviews (i) – used to answer RQ 2.3

Chaffee, R. K., Briesch, A. M., Johnson, A. H., & Volpe, R. J. (2017). A meta-Analysis of class-wide interventions for supporting student behavior. *School Psychology Review, 46*(2), 149-164. doi:10.17105/SPR-2017-0015.

Walker, V. L., Chung, Y. C., & Bonnet, L. K. (2018). Function-Based Intervention in Inclusive School Settings: A Meta-Analysis. *Journal of Positive Behavior Interventions, 20*(4), 203-216. doi:10.1177/1098300717718350

Watkins, L., Ledbetter-Cho, K., O'Reilly, M., Barnard-Brak, L., & Garcia-Grau, P. (2019). Interventions for students with autism in inclusive settings: A best-evidence synthesis and meta-analysis. *Psychological Bulletin, 145*(5), 490-507. doi:10.1037/bul0000190

Systematic reviews (i) – cited only

Evans, J., Harden, A., & Thomas, J. (2004). What are effective strategies to support pupils with emotional and behavioural difficulties (EBD) in mainstream primary schools? Findings from a systematic review of research. *Journal of Research in Special Educational Needs, 4*(1), 2-16. doi:http://dx.doi.org/10.1111/J.1471-3802.2004.00015.x

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Horner, R.H. & Kratochwill, T.R. (2012). Synthesizing single-case research to identify evidence-based practices: some brief reflections. *Journal of Behavioral Education, 21*, 266-272.

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education*, *34*, 26–38. doi:10.1177/0741932512452794

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Rhodes, I. & Long, M. (2019). *Improving behaviour in schools. Guidance report.* London: Education Endowment Foundation.

What Works Clearinghouse. (no date). Standards handbook, version 4.0 Available from: https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_standards_handbook_v4.pdf

Appendix to Chapter 5

Definitions used or implied in the systematic reviews – and our allocation of these to the Göransson & Nilholm (2014) categories

Date	First author	Researcher definition of inclusion	Mapping on to Göransson & Nilholm (2014) categories
2003	Nowicki	"Inclusive education is the commitment to educate each child, regardless of the presence or absence of disabilities, to the maximum extend appropriate in the school and classroom that the child would otherwise attend. As such, it can be seen as an attempt by the education system to accept, educate, and include all children and adolescents from the community" (p.172)	C. General individualised
2004	Evans	"the inclusion, as far as possible, of all children within mainstream schools" (p3)	C. General individualised
2008	Kambalouka	"in relation to pupils with special educational needs (SEN), the term 'inclusion' typically refers to the placement in a regular school population of students who might otherwise be placed outside the mainstream" (p366)	A. Placement
2009	Rix	[Inclusion not defined. Implied definition is placement of pupils with SEN in mainstream classrooms.]	A. Placement (implied)
2011	Parsons	[Inclusion not defined. Implied definition is placement of pupils with SEN, specifically autism, in mainstream classrooms.]	A. Placement (implied)
2014	Kurniawati	"Within an inclusive perspective on teaching, students with SEN are not only physically integrated, but also	C. General individualised

		socially, culturally and emotionally integrated […] The concept of inclusion thereby becomes part of a broad human rights agenda that values the education of students with SEN in regular education systems, as stated in the UN Convention on the Rights of Persons with Disabilities (2006) and the UNESCO Salamanca Statement (1994).” (p311)	
2015	Falkmer	“In recent conceptualisations, important aspects of inclusion have been founded on the right to be present and accepted in a school environment (UNESCO, 2005). Furthermore, it has been emphasised that inclusive schools should aim to provide all students with opportunities to achieve goals across the curriculum and to enhance the development of social and emotional skills through positive interactions with peers and teachers (UNESCO, 2005).” (p2)	C. General individualised
2016	De Vroey	“a school-wide process of improving educational effectiveness for all, supporting every student’s full participation, and reducing exclusion of vulnerable learners.” (p110) “A school’s inclusive culture reflects the shared values and beliefs, habits and stories, collaboration, responsibilities and boundaries that are accepted in its community with regard to diversity” (p110) “Second, inclusive policy establishes clear roles and responsibilities, procedures and guidelines for coordinating, monitoring and evaluating education programmes, support and reflection” (p111). “Finally, culture and policy are translated into inclusive practices, in which resources are mobilised and learning is orchestrated.” (p110)	C. General individualised – possibly verging into - D. Community

2016	Leuders	“inclusive classrooms, teaching materials need to be adequate and available, so that blind and sighted students can work together” (p43)	B. Specified individualised
2016	Roberts	“Inclusion involves ‘the incorporation of all children and youths as active fully participating members of the school community’ (Lynch and Irvine 2009, 286).” (p1084)	C. General individualised
2017	Chafee	[Inclusion not defined. Implied definition is placement “in the general education environment” (p151)	A. Placement (implied)
2017	Garrote	Based on UNCRPD, 2006: “to give pupils with SEN the opportunity to live and learn next to typically developing (TD) children of the same age and to be considered full members of the classroom and the community.” (p12)	C. General individualised
2017	Szumski	“educational arrangements that are optimal for all students” (p34)	C. General individualised
2018	Gilund	“The term inclusion […] embraces both social disadvantage and SEN; [and] is usually promoted from a wider perspective that is principled and idealistic – or even ideologically.” (p46)	C. General individualised
2018	Walker	“to spend some or most of their school day receiving instruction from general educators alongside peers without disabilities in inclusive classrooms” (p203)	A. Placement
2019	Anaby	“integrated in regular classes” and experience “academic success and social participation (p16)	B. Specified individualised

2019	Chae	"inclusion of individuals with disabilities in their local communities and schools", based on UNCRPD, 2006 (p343)	C. General individualised
2019	Hutzler	" […] UNCRPD (United Nations 2006) acknowledged that children with disabilities have equal rights to those without disabilities in the community." p250.	C. General individualised
2019	Watkins	"Inclusive school settings were defined as those in which the student with ASD shared the context and activities with typically developing classmates […]. As inclusion refers to the placement of special education students in general education settings […] studies that took place in a self-contained special education class were excluded […]." (p492)	A. Placement

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6 Evidence on effective school leadership of SEND

6.1 Introduction

In this chapter, two review questions are addressed in turn:

- What is the role of the school leader in effective provision for pupils with SEND?
- What is the role of the SENDCO in effective provision for pupils with SEND?

First we briefly provide a context by referring the reader to guidance on these roles within the *SEND Code of Practice, 0-25 years* (DfE, 2015).

The role of the school leader (e.g. head teacher, principal) is not defined explicitly in the *SEND Code of Practice, 0-25 (DfE, 2015)*. Chapter 6 of that Code makes many references to the duties and expectations of "schools" but few specific mentions of the school leader. This, arguably, allows for distributed leadership of SEND responsibilities but also, arguably, carries the risk that 'school' responsibilities become 'no-one's' responsibilities in practice. Conversely, national guidance on the role of SENCOs is clear within the Code (DfE, 2015, sections 6.84-6.94, pp108-109). The listed SENCO responsibilities could be used to create a strong theory of change and logic model for how the role may link to improved outcomes for pupils with SEND.

6.2 What is the role of the school leader in effective provision for pupils with SEND?

6.2.1 Overview of findings

One systematic review (Cobb, 2015) synthesised research evidence on the role of the school leader in effective special education provision. Based entirely on data from North America (the United States of America and Canada), the 19 included studies were mainly qualitative (one was mixed methods). The author drew on these to develop a typology of seven roles across three domains that school leaders enact when leading a school's inclusive special education provision. The roles were, "visionary, partner, coach, conflict resolver, advocate, interpreter, organiser", and the domains, "inclusive programme delivery, staff collaboration, parental engagement" (Cobb, 2015, p221). The author acknowledged that these might not encapsulated the full range of roles and domains within the leader's role (Cobb, 2015, p230) The typology was put forward as a basis for acknowledging and supporting within leadership preparation programmes the "multifaceted and demanding" nature of a school leader's work around special education (Cobb, 2015, p230).

Strength of evidence: **low**

Relevance to England's mainstream school leaders: medium

6.2.2 Further details of findings

We found no systematic reviews on this topic based on data from the UK. The only systematic review we found (Cobb, 2015) was based entirely on studies focused on North America. Cobb provides a thematic synthesis of the role of the school principal, identifying, from across all the included studies, three main 'domains' of the role in relation to special education and seven 'roles' (Figure 33).

Figure 33 Cobb's typology of the roles school principals play in relation to special education

Roles	**The three domains**		
	Inclusive programme delivery (11/19 studies)	Staff collaborations (14/19 studies)	Parental engagement (5/19 studies)
Visionary	8/19 studies e.g. model positive attitudes and beliefs about inclusion and equity; communicate clear expectations about inclusive teaching practices and a supportive, collaborative working environment	9/19 studies e.g. openly promote own belief in inclusion whilst nurturing staff team to understand why and how to deliver inclusive education so as to create shared vision of inclusion; use collaborative planning and decision-making; offer constructive feedback and mentoring	[0/19 studies]
Advocate	3/19 studies e.g. for financial and human resources to deliver high-quality inclusive education	[0/19 studies]	[0/19 studies]
Interpreter	3/19 studies e.g. interpret research to identify effective practice; interpret local and national	[0/19 studies]	1/19 studies e.g. interpret law, regulations and policies to enable parents to

	policy on SEND and inclusion		understand their rights
Organiser	7/19 studies e.g. organise how the budget is spent to enable inclusion; how inclusion is enacted; organise effective professional development around inclusion	11/19 studies e.g. enable access to specialists; create teams, budget for, recruit and deploy staff; enable staff to meet to plan together	1/19 studies e.g. respond to the logistical needs of parents when setting up meetings with them
Partner	[0/19 studies]	11/19 studies e.g.to foster staff collaboration through partnerships with staff, with parents; collaborative practices (discussing , team planning, shared decision-making); enable staff to meet to collaborate and plan jointly	4/19 studies e.g. provide opportunities for parents to share their perspective; be flexible and willing to negotiate
Coach	[0/19 studies]	7/19 studies e.g. enabling staff collaboration by acting as source of encouragement and advice about special education; mentor staff; establish an inclusive attitude to group identity and norms of interaction	[0/19 studies]
Conflict resolver	[0/19 studies]	5/19 studies e.g. being aware of conflict and tension; offering clarity of roles and	[0/19 studies]

		responsibilities; involve teachers in decisions around school discipline	

Source: Derived from text in Cobb (2015)

6.2.3 Evidence base for findings

The evidence on what makes an effective school leader regarding providing an inclusive and high-quality education for pupils with SEND is lacking.

The one systematic review we found, Cobb (2015), was based on 19 studies that focused on North America only. It drew on 13 studies with human participants, plus four literature reviews; one policy analysis and one document analysis study (p219). It presented a role typology (theory) developed on the basis of largely qualitative research.

Figure 34 Strength of evidence summary: school leadership in effective provision for pupils with SEND

Dimension	**Details**
Place on development of theory to evidence-based practice line	Theory (role typology); evidence base for effectiveness lacking.
Number of SRs showing positive results	0
Precision of these results	NA
Quality of the SRs as SRs (CASP)	NA
Total number of included studies	1
Total number of relevant participants	Not reported
Study designs of included studies	Qualitative research; one mixed methods; literature reviews; policy analysis; document analysis.
Quality assurance of included studies	No QA tool used. Studies had to have been peer-reviewed.
Judgement	Low

Further information about the systematic review is provided in Figure 35.

Figure 35 Systematic review relevant to RQ: What is the role of the school leader in effective provision for pupils with SEND?

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					**CASP- SR Quality of article**					
Cobb	2015	"This meta-analysis will examine current North American research on the work of school principals as special education leaders.", p214	2001 and 2011., p216	"data-based", p216	No QA tool used; had to be peer-reviewed and data-based.	"The 19 studies examined in this meta-analysis indicate that principals navigate three domains when working to foster special education inclusion. While principals encourage inclusive programme delivery, they also facilitate staff collaboration to enrich school-wide inclusion, and foster parental engagement to establish an inclusive atmosphere in the school community. [...] Further,the literature examined in this meta-analysis indicates that principals tend to take on seven roles as they navigate the three domains.", p220.	19 studies - 13 with human participants (plus 4 lit reviews; 1 policy analysis and 1 document analysis), p219.	382 school principals (plus 93 schools)	NR	NR

6.2.4 Relevance of available evidence to England's mainstream school leaders

Cobb's typology is derived from North American education contexts that are rather different from the English context. In relation to special educational needs, however, a key similarity is that the right to be included and the right to be treated as of equal value are core parts of the relevant legislation and policy in both contexts. We can therefore be reasonably confident that Cobb's typology of domains and roles has relevance to school leaders in England. It can be used as a heuristic device to help develop thinking about the diverse range of 'parts' our school leaders play in delivering effective educational provision for pupils with SEND.

For example, it could be used to identify explicitly (to name) the roles of school leaders that are frequently not made explicit but which are implicit expectations (and indeed statutory requirements, in some cases) in Chapter 6 of the *SEND Code of Practice, 0-25 years* (DfE, 2015). (Chapter 6 most frequently refers to responsibilities of 'the school', only rarely specifying 'school leader' or equivalent.) As Cobb points out, this way of using the typology can then be used to "help to identify and address [school leaders'] needs" (p228), including the need for "learn[ing] about special education both as they prepare to become principals and afterwards", (p230).

Its relevance is also that is expands, without contradicting, the model of inclusive school leadership used in England, consisting of four characteristics: vision, commitment, communication and collaboration (Blandford, 2012; NCLS, 2010). This model, in turn, derives from a model of school leadership in general (NCSL, 2007; Leithwood, Day, Sammons, Harris, Hopkins, 2006). The Cobb typology resonates with this model, suggesting the relevance of the typology in England.

Figure 36 Relevance to England's mainstream schools summary: school leadership in effective provision for pupils with SEND

Dimension	Details
Relevance of participants in the studies	Yes (school leaders)
Relevance of the research questions of the SRs to mainstream schools	Yes – although focused on North America
Relevance within England's legislative and Code of Practice context	Yes – because role of school leader is also important in England's context
Relevance to the educational and external services delivery context in England	Yes - as a way of thinking further about leadership of SEND in mainstream schools
Judgement	Medium

References

Systematic review

Cobb, C. (2015). 'Principals play many parts: a review of the research on school principals as special education leaders 2001-2011', International Journal of Inclusive Education, 19:3, 213-234. DOI: 10.1080/13603116.2014.916354.

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6.3 What is the role of the special educational needs and disabilities coordinator (SENDCO) in effective provision for pupils with SEND?

6.3.1 Overview of findings

We found no systematic reviews on the leadership role of the SENDCO within our date limits of 2000 to 2019.

Removing the requirement for the study design to be a systematic review, we re-ran a rapid and narrower version of the search covering 2010-2019. This yielded 14 empirical research studies, of which the majority were small-scale qualitative studies, with a further four studies using questionnaires to gain views and perceptions of larger numbers of SENCOs. This corroborates, for the SENCO role, Cobb's finding related to school principals that, "research on special education principal leadership tends to be qualitative in nature", (Cobb, 2015, p219).

Strength of evidence: low

Relevance to England's mainstream school SENDCOs: low

6.3.2 Further details of findings

As no systematic reviews on the leadership role of SENDCOs were found within our search parameters, we looked for primary research studies on the topic. We limited that search to the three Ebsco-hosted databases we had used in the search for systematic reviews (the other three databases we searched on this topic had provided duplicates only). We narrowed the date limits to 2010-2019 to seek studies that would be most relevant to the current situation for SENDCOs in mainstream schools in England.

We found 14 primary research studies relevant to the leadership role of SENDCOs. Only one, a small-scale qualitative study by Burton and Goodman (20011), discussed the role in relation to outcomes for pupils with SEND. They reported that the four SENCOs in their study identified three aspects of their role that supported inclusion of pupils with behavioural, emotional and social difficulties (BESD):

- having an understanding of BESD enabled them to adopt a more analytic view of pupil behaviour than class teachers (p139);
- having time to build relationships with pupils with BESD (p141)
- being able to provide a nurturing environment where these pupils felt "safe and secure" (p141).

The other studies reported views and perceptions of the role itself.

6.3.3 Evidence base for findings

The evidence base for this research question is missing from the literature. We found no systematic reviews and minimal research evidence addressing the topic of how the role of SENCO links to effective provision for pupils with SEND (that is, provision that is linked to positive outcomes for these pupils).

We found 14 research studies, 2010 – 2019, based on views and perceptions of non-generalisable samples of SENCOs. Only one of them addressed the impact of the role on outcomes for pupils with SEND: Burton and Goodman (2011), in their small-scale qualitative study.

Figure 37 Strength of evidence summary: leadership role of SENCOs in effective provision for pupils with SEND

Dimension	**Details**
Place on development of theory to evidence-based practice line	Statutory implementation in schools; research on impact on pupils with SEND missing.
Number of SRs showing positive results	0
Precision of these results	NA
Quality of the SRs as SRs (CASP)	NA
Total number of included studies	0
Total number of relevant participants	NA
Study designs of included studies	NA
Quality assurance of included studies	NA
Judgement	Low

Figure 38 provides structured summary details of the recent original research studies relating to views and perceptions of the SENCO role.

Figure 38 Recent original research on role of SENCOs, 2010 to 2019

First author	Date	Country	School phase/s	Participants	Study design
Smith	2019	England	primary	15 SENCOs	Qualitative interviews
Maher	2018	England	secondary	12 SENCOs; 12 LSAs	Qualitative interviews
Fitzgerald	2017	Ireland	secondary	27 SENCOs	questionnaire; interviews
Done	2016	England	not reported	1 SENCO	Qualitative case study
Pearson	2015	England	both	227 SENCOs	qualitative analysis of responses to one open question in 2012 national survey
Brown	2014	England	both	56 SENCOs	questionnaire
Tissot	2013	England	both	146 SENCOs	mixed methods: pre- questionnaire (146); post-questionnaire (63); follow-up interviews (10)
Blandford	2013	England	both	44 headteachers or project leaders	qualitative
Evans	2013	England	primary	3 SENCOs	qualitative (psychoanalytic)
Lindqvist	2013	Sweden	not reported	29 school leaders	questionnaire
Poon-McBrayer	2012	Hong Kong	both	6 SENCOs	qualitative
Oldham	2012	England	secondary	10 SENCOs; 2 LSAs	qualitative
Burton	2011	England	secondary	4 SENCOs; 8 support staff	qualitative
Agaliosis	2011	Greece	primary	466 teachers	questionnaire

6.3.4 Relevance of available evidence for England's SENDCOs

Ten of the 14 studies are based on views of SENCOs in England or on perceptions of the role of SENCOs in England. In that sense, they are relevant. The four studies based on views of or about SENCOs in other countries are not relevant. In terms of answering the research question, 'What is the role of the special educational needs and disabilities coordinator (SENDCO) in effective provision for pupils with SEND?', the studies have minimal relevance as there is almost no evidence linking the role of SENCO with effective practice for pupils with SEND.

Figure 39 Relevance to England's mainstream schools summary: leadership role of SENDCOs in effective provision for pupils with SEND

Dimension	Details
Relevance of participants in the studies	Yes for 10/14 studies
Relevance of the research questions of the SRs to mainstream schools	(No systematic reviews) RQs of studies not relevant to this RQ
Relevance within England's legislative and Code of Practice context	Yes for 10/14 studies
Relevance to the educational and external services delivery context in England	Yes for 10/14 studies
Judgement	Low

References

No systematic reviews

Other references

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Smith, M. D., & Broomhead, K. E. (2019). Time, expertise and status: barriers faced by mainstream primary school SENCos in the pursuit of providing effective provision for children with SEND. *Support for Learning, 34*(1), 54-70. doi:10.1111/1467-9604.12237

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7 Evidence on assessment and identification of learning needs

7.1 Introduction

This chapter has three sub-sections covering three aspects of formative assessment (response to intervention; multiple informant assessment; alternative assessment). The latter is also one aspect of summative assessment. All address, in part, the same research question:

- How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision?'

First, we set the scene by summarising guidance on identification and assessment of needs in the *SEND Code of Practice, 0-25 years* (DfE, 2015). It emphasises the benefits of early identification of SEN in school (p94, 6.14) and states that:

> 'Class and subject teachers, supported by the senior leadership team, should […] seek **to identify** pupils making less than expected progress given their age and individual circumstances.' (DfE, 2015, p95, 6.19)

The recommended response when such pupils are identified is to ensure there is 'high quality teaching targeted at their areas of weakness' (p95, 6.18). When progress continues to be below expectations, the class or subject teacher and the SENCO are **to assess** if the pupil has SEN.

The recommended approach consists, first, of **three steps of "early action":**

1. Providing "high quality teaching, differentiated for individual pupils"
2. Teacher and SENCO gathering together all school information about a pupil's progress - including "high quality and accurate formative assessment, using effective tools and early assessment materials", "an early discussion with the pupil and their parents", and, where necessary, using "more specialised assessments from external agencies and professionals", - and considering these together in relation to "national data and expectations of progress"
3. Setting out, "the desired outcomes, including the expected progress and attainment and the views and wishes of the pupil and their parents"; using this to decide the support required and whether or not this can be provided "by adapting the school's core offer or whether something different or additional" is needed; and agreeing actions to "help the pupil achieve the identified outcomes and remove any barriers to learning" and a date for review.

Source: DfE, 2015, pp99-100, 6.37-6.43

If a decision is then made that the pupil does have special educational needs (SEN), the second phase of formative assessment begins, known as **"SEN support".** This is described as taking, "action to remove barriers to learning and put effective special educational provision in place":

> "This SEN support should take the form of a four-part cycle [assess; plan; do; review] through which earlier decisions and actions are revisited, refined and revised with a growing understanding of the pupil's needs and of what supports the pupil in making good progress and securing good outcomes. This is known as the graduated approach. It draws on more detailed approaches, more frequent review and more specialist expertise in successive cycles in order to match interventions to the SEN of children and young people."(DfE, 2015, p100, 6.44).

The systematic review evidence for this 'graduated approach' to assessment is the focus of Section 7.2.

7.2 How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision? (graduated approach/response to intervention)

7.2.1 Overview of findings

We found no systematic reviews of the approach recommended in England (DfE, 2015, pp99 – 102) for formative assessment of learning needs of pupils with SEND. This recommended approach consists of a three steps of "early action"(DfE, 2015, pp99-100, 6.37 - 6.43), followed where necessary by the "graduated response" of 'assess, plan, do, review' (DfE, 2015, p100-102, 6,44 – 6.56). Expert consensus (McLeskey, Barringer, Billingsley, Brownell, Jackson, Kennedy, Lewis, Maheady, Rodriguez, Scheeler, Winn, Ziegler, 2017, pp48-49) is that this type of formative assessment represents a sound logic model.

It is only when formative assessment is coupled with pedagogical action (an intervention) that its effectiveness can be researched. 'Response to intervention' is the approach to formative assessment used in the United States of America. We found two systematic reviews of this (Tran, Sanchez, Arellano & Swanson, 2011; Burns, Appleton,& Stehouwer, 2005) both reporting positive outcomes for (specific sub-groups of) pupils with SEND. The more recent of these has been heavily criticised on methodological grounds (Stuebing, Fletcher and Hughes, 2012) but without challenging the finding of positive outcomes for pupils.

Strength of evidence: sound logic model; low to medium evidence of effectiveness
Relevance to England's mainstream schools: high

7.2.2 Further details of findings

We found no systematic reviews of the recommended approach in England (DfE, 2015, pp99 – 102) to formative assessment of learning needs of pupils with SEND. Indeed, Greenwood & Kelly (2017, p396) described research on the topic as "scarce".

The Center for Exceptional Children in the USA (McLeskey et al., 2017) identified "research-based" (p10, Table 1) high-leverage practices in special education, with three relevant to assessment (pp41-54). These derive from a synthesis of research studies, not from systematic reviews, and represent a consensus of expert opinion.

The two high-leverage practices specifically focused on a processes similar to 'assess, plan, do, review' are set out in Figure 40.

Figure 40 Cycle of assess, plan, do, review as a high-leverage assessment practice identified by McLeskey et al.'s research synthesis (2017)

HLP6	**Use student assessment data, analyze instructional practices, and make necessary adjustments that improve student outcomes.**
"After special education teachers develop instructional goals, they evaluate and make ongoing adjustments to students' instructional programs. Once instruction and other supports are designed and implemented, special education teachers have the skill to manage and engage in ongoing data collection using curriculum-based measures, informal classroom assessments, observations of student academic performance and behavior, self-assessment of classroom instruction, and discussions with key stakeholders (i.e., students, families, other professionals). Teachers study their practice to improve student learning, validate reasoned hypotheses about salient instructional features, and enhance instructional decision making. Effective teachers retain, reuse, and extend practices that improve student learning and adjust or discard those that do not." (p47)	
HLP5	**Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs.**
"Teachers interpret assessment information for stakeholders (i.e., other professionals, families, students) and involve them in the assessment, goal development, and goal implementation process. Special educators must understand each assessment's purpose, help key stakeholders understand how culture and language influence interpretation of data generated, and use data to collaboratively develop and implement individualized education and transition plans that include goals that are standards-based, appropriate accommodations and modifications, and fair grading practices, and transition goals that are aligned with student needs." (p45)	

Source: McLeskey, J., Barringer, M-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., Lewis, T., Maheady, L., Rodriguez, J., Scheeler, M.C., Winn, J., & Ziegler, D. (2017). *High-leverage practices in special education.* Arlington, VA: Council for Exceptional Children and CEEDAR Center. (Chapter on Assessment, pp41-54)

Response to Intervention (RTI)

There have been two systematic reviews of the American version of formative assessment and identification of pupils with SEN, known as 'response to intervention' or RTI. This is an approach introduced in the United States of America (USA), under the Individuals with Disabilities Education Improvement Act (IDEIA), 2004. As with England's "early action" and "graduated response", it is used both as a

form of assessment of learning needs to guide pedagogical decisions and as a way of identifying the minority of pupils who have special educational needs (called 'learning disabilities' in the USA).

Both Tran, Sanchez, Arellano & Swanson (2011) and Burns, Appleton,& Stehouwer (2005) examine response to intervention (RtI). Because the former do so in relation to pupils with reading disabilities and the later in relation to pupils, "experiencing academic difficulties or learning disabled" (p384), the reviews are addressed in turn, rather than synthesised.

The Burns, Appleton,& Stehouwer (2005) meta-analysis addressed three questions, one of which was directly relevant to the present review: "Does RTI lead to improved [systemic and] student outcomes?" (p383). It was based on 21 studies (using 24 effect sizes) that implemented RTI "with children experiencing academic difficulties or identified as learning disabled" (p384). They reported on 24 effect sizes (ES), 11 of which related to student **academic outcomes**, the focus of our review. The mean ES was .96 and the median ES .72, with a standard deviation (SD) of .77. They then aggregated data to calculate an unbiased estimate of effect (UEE) using Hedges (1982) formula[16]. They found that schools using RTI improved student outcomes (UEE 1.02,). They also found that it improved systemic outcomes too (UEE 1.54), calling this "a promising sign" (p388). The authors stated, however, that, "some caution should be exercised when interpreting these data given the relatively large standard deviations for the effect sizes." (p390).

Tran, Sanchez, Arellano & Swanson (2011) conducted a meta-analysis of 13 studies involving 216 school-age pupils, "considered at risk for reading disabilities who were given an intervention (i.e., Tier 1 [whole-class], Tier 2 [small group]) that focused on achievement (e.g., reading, math, writing, etc.)." (p285). Their meta-analysis sought to build and improve on previous meta-analyses relating to response to intervention (including Burns, Appleton and Stehouwer's review, which they criticised in relation to the systemic outcome findings but not in relation to the student outcome findigns). They set out to examine whether or not intervention narrows the achievement gap in, "children at risk for learning disabilities when pretest performance is taken into consideration" (p284). They wanted to find out which measures of performance at pre-test best predicted performance at post-test; and whether or not the achievement gap between 'responders' and 'non-responders' to intervention was reduced at post-test. The authors wanted to find out if RTI procedures reduced the influence of individual learner characteristics measured at pretest on achievement at post-test. In other words, did a graduated approach result in 'at risk' pupils making progress? Did it also result in a reduction in the achievement gap as measured at pretest?

The mean overall gain in **academic achievement** was 1.20 (N=41, SD = 1.82) for 'responders' to intervention and .72 (N = 41, SD = 1.90) for 'low responders' to intervention (p290). Overall, they concluded that, whilst RTI improved pupil

[16] "The UEE [unbiased estimate of effect] is a weighted estimator of effect using *d* and the sample size for each individual study.", Burns et al., 2017, p386.

performance, their synthesis had not established the validity of RTI and that it did not change the achievement gap at posttest between those with higher versus lower scores at pretest (p293). However, this systematic review has itself been heavily criticised on methodological grounds by Stuebing, Fletcher and Hughes (2012). Stuebing, Fletcher and Hughes argue that an inappropriate analytical framework was used, including the "logically troublesome" fact that some included studies defined 'responders' versus 'low responders' at pretest (p3); that the interpretation of effect sizes was flawed; that a conclusion drawn about phonological awareness was wrong; and that the conclusion that RTI is not effective went, "beyond the data and research questions" (p6). They suggest that the effectiveness of RTI can only be assessed via random control trials and syntheses of RCTs.

7.2.3 Evidence base for findings

There is a strong consensus across America and England that a structured process of formative assessment as described in section 1.1.2 is a sound logic model for action to identify and then address needs in cycles of increasing refinement. In 2009, the What Works Clearing House deemed the strength of research evidence for data-driven decision-making about learning needs and teaching intervention as 'low' (p10) because it was largely based on qualitative research. However, they had not included in their assessment one available systematic review of the American approach, RTI, that found that RTI improved pupil outcomes significantly (Burns, Appleton, Stehouwer, 2005). A later review (Tran, Sanchez, Arellano, Lee Swanson (2011) deemed RTI effective in improving pupil progress yet ineffective in addressing the achievement gap between those who respond to intervention and those who do not. However, this systematic review, and in particular that second conclusion, was subsequently heavily criticised on methodological grounds by Steubing, Fletcher and Hughes (2012), such that it can be safely discounted. The Steubing et al. critique does not detract from the fact that the Tran et al. meta-analysis was based on 13 studies involving 216 pupils reporting positive quantitative outcome data. The quality of these included studies was not assessed, however.

Figure 41 Strength of evidence summary: Structured process of formative assessment

Dimension	Details
Place on development of theory to evidence-based practice line	Sound logic model; has been implemented at scale and effectiveness researched in typical settings
Number of SRs showing positive results	2
Precision of these results	Results of Tran et al. heavily criticised (Steubing et al.); results of Burns et al. need to be treated with caution because of the heterogeneity of effect sizes in the included studies

Quality of the SRs as SRs (CASP)	One better than the other; both had weaknesses, one seriously so
Total number of included studies	34
Total number of relevant participants	216+ (plus unreported number)
Study designs of included studies	Not reported. (All included quantitative results such that effect sizes could be calculated.)
Quality assurance of included studies	Neither review used a recognised quality assurance tool to assess included studies; both reviews defined clear inclusion/exclusion criteria.
Judgement	Low to Medium strength

See Figure 42 for structured summary details about both systematic reviews included in this section.

Figure 42 Systematic reviews relevant to RQ: How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision?: Specifically response to intervention

First Author	Date	Rresearch questions, purpose or aim for the systematic review	Dates included in systematic search	Limits 4: Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
		Basic article info			CASP- SR Quality of article					
Tran	2011	1. " to determine the characteristics (i.e., age, psychometric, and demographic) of responders and low responders in children at risk for reading disabilities. [...] [i.e. do] problems in phonological awareness play a major role in predicting posttest outcomes." 2. "to identify those variables that moderate posttest outcomes" (p285)	No limits set	enough "quantitative data to calculate the [effect sizes] at pretest and posttest "with information on "sample size, pretest performance, psychometric information, and/or demographic information" (p285)	Yes - no QA tool used but clear selection criteria; clear exclusion criteria based on info needed to be provided in included studies, p285	"The current synthesis suggests that RTI procedures do improve performance as reflected in gain scores; however, the differences (achievement gap) between responding and low responding children were maintained across pretest and posttest conditions.", p293.	13 studies, p288	216	216	0

First Author	Date	Rresearch questions, purpose or aim for the systematic review	Dates included in systematic search	Limits 4: Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
		Basic article info			CASP- SR Quality of article					
Burns	2005	"This metaanalysis was designed to address three questions: META-ANALYTIC REVIEW OF RTI RESEARCH 383 1. How effective are the large-scale RTI models currently in practice as compared to those developed for research? 2. Does RTI lead to improved systemic and student outcomes? 3. On average, what percentage of the student population was determined to have a disability under RTI?" p383-4	Not restricted, p384	at least one between-group comparison and/or at least one within-group comparison of the outcomes	No tool used. Inclusion/exclusion criteria included study design - see Limits. QA otherwise NR.	"The current study investigated the effectiveness of large-scale RTI models as compared to those developed for research and examined systemic and student outcomes. Both field-based and university-based RTI models led to strong effects, with the former stronger than the latter, but larger effects were found for systemic rather than student outcomes.", p388	21 studies (24 effect sizes used)	NR	NR	NR

7.2.4 Relevance of available evidence to England's mainstream schools

Both systematic reviews included in this section were about RTI, the approach used in America, rather than 'early action' and 'graduated approach', as recommended in England. Nevertheless, because RTI is a similar, staged process to the English 'graduated approach', the findings are relevant to England. The search upper date limit for these systematic reviews were 2004 (Burns et al., 2005) and 2010/11 (Tran et al., 2011) and so the findings may be a little outdated now.

The English *SEND Code of Practice, 0-25* (DfE, 2015) and the American publication on high-leverage practices (McLeskey et al., 2017) are perhaps the most relevant to mainstream schools in England, as they set out the detail of an approach to formative assessment of the learning needs of pupils with SEND that are based on a sound logic model. The What Works Clearinghouse practice guide (2009), alluded to in Section 1.1.3, also seems relevant to mainstream schools in England.

Figure 43 Relevance to England's mainstream schools summary: Structured process of formative assessment

Dimension	Details
Relevance of participants in the studies	Yes (school age pupils with SEND)
Relevance of the research questions of the SRs to mainstream schools	Yes
Relevance within England's legislative and Code of Practice context	Translates easily to England's context
Relevance to the educational and external services delivery context in England	Translates easily to England's context
Judgement	High

References

Systematic reviews

Burns, M. K., Appleton, J. J., & Stehouwer, J. D. (2005). Meta-Analytic Review of Responsiveness-to-Intervention Research: Examining Field-Based and Research-Implemented Models. *Special Issue: Response to Intervention., 23*(4), 381-394. doi:http://dx.doi.org/10.1177/073428290502300406

Tran, L., Sanchez, T., Arellano, B., & Swanson, H. L. (2011). A meta-analysis of the RTI literature for children at risk for reading disabilities. *Journal of Learning Disabilities, 44*(3), 283-295. doi:http://dx.doi.org/10.1177/0022219410378447

Other references

Department for Education. (2015). *Special educational needs and disability code of practice, 0-25 years*. DFE-00205-2013. Download from: www.gov.uk/government/publications

Greenwood, J. & Kelly, C. (2017). Implementing cycles of Assess, Plan, Do, Review: a literature review of practitioner perspectives, *British Journal of Special Education*, *44* (4), 394-410. doi: 10.1111/1467-8578.12184

McLeskey, J., Barringer, M-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., Lewis, T., Maheady, L., Rodriguez, J., Scheeler, M.C., Winn, J., & Ziegler, D. (2017). *High-leverage practices in special education.* Arlington, VA: Council for Exceptional Children and CEEDAR Center. (Chapter on Assessment)

Stuebing,K.K., Fletcher, J.M. and Hughes, L.C. (2012). Meta-analysis and inadequate responders to intervention: a response. *Journal of Learning Disabilities*, 45 (6), 565-569. doi: 10.1177/0022219412451999

What Works Clearinghouse (2009). *Using student achievement data to support instructional decision making.* NCEE 2009-4067. U.S.Department of Education. https://ies.ed.gov/ncee/wwc/practiceguide/12

7.3 How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision? (multiple informant assessment)

7.3.1 Overview of findings

One systematic review (Nelson & Harwood, 2011) demonstrated the useful and important role teachers can play, alongside parents and others, in formative assessment of the mental wellbeing of pupils with SEND. Multi-informant assessment is recommended good practice in England (DfE, 2015) and is included as a high-leverage practice in a high-quality research synthesis (McLeskey, Barringer, Billingsley, Brownell, Jackson, Kennedy, Lewis, Maheady, Rodriguez, Scheeler, Winn, Ziegler, 2017, pp41-54)

Strength of evidence: medium

Relevance to England's mainstream schools: high

7.3.2 Further details of findings

In England, multi-informant assessment is recommended good practice (DfE, 2015 – for example, p99, 6.38-39). We found one systematic review (Nelson & Harwood, 2011) that focused specifically on parent versus teacher reports of depressive symptoms among pupils with 'learning disabilities' [SpLD in England] to argue for the importance of multi-informant assessment. They used meta-analysis to find out, "whether students with LD had different mean scores than did non-LD students on parent and teacher reports of depression, and, if so, to determine the magnitude of these differences." (p373)

Based on 31 studies involving 1,788 pupils identified with learning disabilities [LD: the American term broadly equivalent to specific learning difficulties (SpLD)] (p375), they reported **mental health outcomes**:

> "Students with LD were reported [by parents and teachers] to experience more depressive symptomatology than were non-LD students, $z = 10.92$, $p < .001$. The magnitude of the difference was medium ($d = .75$), and the 95% confidence interval ranged in magnitude from medium ($d = .61$) to large ($d = .88$)." (p376).

They found that teachers and parents reported broadly similar levels of depressive symptoms in pupils identified with LD [SpLD] (p378). They contrasted their findings with an earlier meta-analysis of depressive symptoms self-reported by pupils with LD (Maag and Reid, 2006). That study had found that these pupils reported, "only slightly more symptoms of depression than did non-LD students ($d = .35$)", concluding that, "the degree of depressive symptomology among school-age students with LD appears to vary considerably depending on whose perceptions are assessed" (Nelson & Harwood, 2011, p378).

They argue that their findings have implications for practice. Firstly, that students with LD [SpLD], "should be assessed for depressive symptoms" (p379) and secondly

that, “use of a comprehensive assessment framework that incorporates multiple informant and multiple assessment methods to form a thorough clinical picture is recommended”. They state that such an assessment would be led by a psychologist but the important role of both teachers and parents within that process is stressed.

7.3.3 Evidence base for findings

Multiple informant assessment is recommended good practice in England during ‘early action’, the ‘graduated response’ and during formal assessment for an education, health and care plan (EHCP) (DfE, 2015). It is also recommended as a ‘high-leverage practice’ in America’s Council for Exceptional Children & CEEDAR Centre report (McLeskey et al., 2017) – see Figure 44.

Figure 44 Multiple informant assessment as a high-leverage practice identified in McLeskey et al, 2017.

HLP4	**Use multiple sources of information to develop a comprehensive understanding of a student’s strengths and needs.**
“To develop a deep understanding of a student’s learning needs, special educators compile a comprehensive learner profile through the use of a variety of assessment measures and other sources (e.g., information from parents, general educators, other stakeholders) that are sensitive to language and culture, to (a) analyze and describe students’ strengths and needs and (b) analyze the schoolbased learning environments to determine potential supports and barriers to students’ academic progress. Teachers should collect, aggregate, and interpret data from multiple sources (e.g., informal and formal observations, work samples, curriculum-based measures, functional behavior assessment [FBA], school files, analysis of curriculum, information from families, other data sources). This information is used to create an individualized profile of the student’s strengths and needs.” (p42).	

Source: McLeskey, J., Barringer, M-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., Lewis, T., Maheady, L., Rodriguez, J., Scheeler, M.C., Winn, J., & Ziegler, D. (2017). *High-leverage practices in special education.* Arlington, VA: Council for Exceptional Children and CEEDAR Center. (Chapter on Assessment, pp41-54)

The single systematic review included here (Nelson & Harwood, 2011) was based on 31 studies, drawing on a large sample (1,788) of pupils with learning difficulties [SpLD in England]. All included studies included quantitative outcome results, expressed as effect sizes.

Nelson & Harwood state that their results need to be treated with some caution because the studies they included were not homogenous (p376) so the overall effect size “may be misleading” (p379). They also noted that they were unable to conduct a moderator analysis to test out explanation of the variance among the studies (p379).

Overall, it provides evidence of the increased risk of depressive symptoms amongst pupils with learning disabilities (SpLD, in England) compared to those without, and of the important role parents and teachers can have in offering a different perspective on these than that of the pupils themselves, as part of a multiple informant assessment.

Figure 45 Strength of evidence summary: Multiple informant assessment

Dimension	**Details**
Place on development of theory to evidence-based practice line	Strong logic model; used at scale; effectiveness studies in typical settings
Number of SRs showing positive results	1
Precision of these results	Variation in effect sizes of included studies; overall effect size therefore may be misleading.
Quality of the SRs as SRs (CASP)	Good enough – some weaknesses
Total number of included studies	31
Total number of relevant participants	1 788
Study designs of included studies	Not reported. (All included quantitative results such that effect sizes could be calculated and a normative comparison made.)
Quality assurance of included studies	No quality assurance tool used. Defined clear inclusion/exclusion criteria.
Judgement	Medium

Figure 46 provides structured summary information about that review.

Figure 46 Systematic review relevant to RQ: How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision? Specifically multiple informant assessment

First Author	Date	Rresearch questions, purpose or aim for the systematic review	Dates included in systematic search	Limits 4: Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Nelson	2011	"to use meta-analytic techniques to examine the extant research on the presence of parent- and teacher-reported depressive symptomatology among school-age students with LD [learning disabilities]. To address this purpose, we sought to determine whether students with LD had different mean scores than did non-LD students on parent and teacher reports of depression, and, if so, to determine the magnitude of these differences." (p373)	1977-2007, plus the reference list of included studies, p373	"studies had to report statistics to calculate an effect size, a criterion that also necessitated studies to include information for making a normative comparison." (p374)	Clear inclusion and exclusion criteria but no QA tool used, p374.	"Our results indicate that parents and teachers perceive students with LD to experience significantly higher depressive symptomatology than non-LD students experience. The magnitude of the difference in depressive symptomatology between these groups was medium (d = .75). Parents and teachers were generally equivalent in their reports, and results did not vary by publication status.", p378	31 studies	1788 students with LD, p375	NR - but included primary school pupils (Table 1, p377)	NR - but included secondary school pupils (Table 1, p377)

Note: 'Learning disabilities' [LD] is a term used in the United States of America. It is broadly equivalent to the term, 'specific learning difficulties', in England.

7.3.4 Relevance of available evidence to England's mainstream schools

In our view, Nelson & Harwood (2011) is relevant to teachers' participating in multi-assessment methods used by educational psychologists (EPs) to identify depression and anxiety among pupils with specific learning difficulties [SpLD; 'learning disabilities' in America]. It is a USA study, and the search date limits were made in the context of the USA legislation (after IDEA, 1997 to 2007) but the research studies were not specific to USA. It was based on 31 studies, involving 1788 pupils with 'learning disabilities' (p375), including some in grades equivalent to England's primary and secondary schools (Table 1, p377).

Figure 47 Relevance to England's mainstream schools summary: Multiple informant assessment

Dimension	Details
Relevance of participants in the studies	Yes (school age pupils with SEND)
Relevance of the research questions of the SRs to mainstream schools	Yes
Relevance within England's legislative and Code of Practice context	Translates easily to England's context
Relevance to the educational and external services delivery context in England	Translates easily to England's context
Judgement	High

References

Systematic review

Nelson, J. M., & Harwood, H. R. (2011). A meta-analysis of parent and teacher reports of depression among students with learning disabilities: Evidence for the importance of multi-informant assessment. *Psychology in the Schools, 48*(4), 371-384. doi:10.1002/pits.20560

Other references

Department for Education. (2015). *Special educational needs and disability code of practice, 0-25 years*. DFE-00205-2013. Download from: www.gov.uk/government/publications

Maag, J. W. and Reid, R. (2006). Depression among students with learning disabilities: assessing the risk. *Journal of Learning Disabilities*, *39*, 3-10.

McLeskey, J., Barringer, M-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., Lewis, T., Maheady, L., Rodriguez, J., Scheeler, M.C., Winn, J., & Ziegler, D. (2017). *High-leverage practices in special education.* Arlington, VA: Council for Exceptional Children and CEEDAR Center. (Chapter on Assessment)

7.4 How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision? (alternative assessment)

7.4.1 Overview of findings

Based on one systematic review (Towles-Reeves, Kleinert & Muhomba, 2009) of which 10 of 40 included studies were relevant to this present review, it is clear that there is no evidence about the use of alternate assessment to inform teaching practices for pupils with significant cognitive disabilities. Five studies included in the review showed that alternate assessments were not being used to inform relevant Individual education Plans [equivalent to Education, health and Care plan in England]. Seven studies included in the review showed that teachers needed more training and support to be able to use alternate assessments to guide educational provision on a day-to-day basis.

Strength of evidence: Low

Relevance to England's mainstream schools: Low

7.4.2 Further details of findings

Although they are a summative assessment, end of year and end of key stage examination/test results are routinely used as part of formative assessment in England. For example, the *SEND Code of Practice, 0-25* (DfE, 2105) recommends that these and other data be included in 'early action' assessments (p99, 6.38) and in 'SEN support' assessments (p100, 6.45). Our literature search found one systematic review relevant to this type of assessment and focused on (a sub-group of) pupils with SEND: those unable to be accommodated within traditional forms of such exams and tests. Towles-Reeves, Kleinert & Muhomba (2009) brought together the evidence on 'alternate assessments based on alternate achievement standards' (AA-AAS). These are American standards regulating the use of alternative assessments that are usually:

> "reserved for a small percentage of the student population [students with "the most significant cognitive disabilities", p233] for whom traditional paper and pencil assessments, even with appropriate accommodations, would be an inappropriate measure of student progress within the general education curriculum." p234.

Their work built directly on an earlier review on the same topic (Browder, Spooner, Algozzine, Ahlgrim-Delzell, Flowers, Karvonen, 2003). Browder and colleagues, in their review, had made six recommendations for the future direction of research on the topic to, "more clearly focus on what we need to know to improve the outcomes of alternate assessments" (p57). Towles-Reeves and colleagues focused their subsequent systematic review on, "how well the current literature on AA-AAS addresses these six categories" (p236). For the purposes of the present review, three of these themes (derived from the Browder et al. recommendations) are relevant. These are set out in Figure 48.

Figure 48 Relevant findings selected from Towles-Reeves et al. (2009) systematic review

Browder et al. (2003) recommendation for future research	**Findings from Towles-Reeves et al. (2009)**
Recommendation 2: Use a Format for Alternate Assessment That Produces Data for Instructional Decisions.	“To date [2007], no published research has directly investigated the use of alternate assessment to directly inform instructional decisions." p239.
Recommendation 3: Link Alternate Assessment to the IEP so Students and Parents Can Participate in Setting the Level of Expectation.	“[...] the five studies conducted in this area to date have revealed a lack of a clear link between alternate assessment and the IEP." p239.
Recommendation 4: Train Teachers in How to Incorporate Alternate Assessment in Daily Practice.	" [...] Together, these seven studies suggest that teachers need considerably more training, as well as explicit examples and ongoing support, in making the connection between alternate assessment and daily instruction." pp240/241.

Source: Towles-Reeves, E., Kleinert, H., & Muhomba, M. (2009). Alternate Assessment: Have We Learned Anything New? *Exceptional Children*, 75, 233-252.

Overall, Towles-Reeves et al. (2009) reported that:

> "Although we have found limited progress in several elements of the research framework proposed by Browder et al. (2003) (e.g., validating performance indicators with content area experts and stakeholders, training teachers in incorporating alternate assessments into daily practice), very significant gaps remain in scholars’ ability to provide practitioners and policy makers with research-based strategies that will enable alternate assessment to truly achieve its promises to students, teachers, and parents.", p249

7.4.3 Evidence base for findings

The evidence base at systematic review level consists of one such review of 40 studies, of which 10 were used to create the findings reported in Figure 48 above. The study design of included studies was not specified in detail (“a quantitative or qualitative research design or provide program evaluation data." (p236). The included studies, “had to have at least one measure directly related to AA-AAS” (p236). No quality assurance tool was used to screen included studies but they had to be, “published or in press in a peer-reviewed journal or part of the knowledge base developed by the National Center on Educational Outcomes (NCEO) prior to July 2007." (p236).

The upper date limit of the literature search was 2007 so the findings may be somewhat out of date now. However, we found no more recent systematic reviews on this topic.

Figure 49 Strength of evidence summary: Formative/summative assessment: alternative assessment

Dimension	**Details**
Place on development of theory to evidence-based practice line	Used at scale (in USA); effectiveness studies in typical settings
Number of SRs showing positive results	0/10
Precision of these results	NA
Quality of the SRs as SRs (CASP)	Good enough – some weaknesses
Total number of included studies	10 relevant; 40 in total
Total number of relevant participants	Not reported
Study designs of included studies	Heterogeneous
Quality assurance of included studies	No quality assurance tool used to screen included studies. Clear inclusion/exclusion criteria.
Judgement	Low

Figure 49 provides a structured summary of the review.

Figure 50 Systematic review relevant to RQ: How best can teachers accurately and usefully identify the learning needs of pupils with SEND and use this to inform educational provision? Specifically alternative assessment based on alternative achievement standards

First Author	Date	Rresearch questions, purpose or aim for the systematic review	Dates included in systematic search	Limits 4: Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Towles-Reeves	2009	"to integrate all the literature conducted since the conception of AA-AAS [alternate assessments based on alternative achievement standards] (including those articles reviewed in [an earlier] review) to determine how well the current literature on AA-AAS addresses [six themes identified by earlier review]." p236	after IDEA [Individual with Disabilities Education Act] 1997 and up to July 2007, p236	"a quantitative or qualitative research design" that "include[d] at least one measure directly related to AA-AAS […] or provide program evaluation data." (p236)	No QA tool used. Included articles had to be peer-reviewed.	" limited progress in several elements of the research framework proposed by [earlier review]; e.g., validating performance indicators with content area experts and stakeholders, training teachers in incorporating alternate assessments into daily practice), [but] very significant gaps remain in scholars' ability to provide practitioners and policy makers with research-based strategies that will enable alternate assessment to truly achieve its promises to students, teachers, and parents.", p249	10 of the 40 studies inform the findings of most relevance to present review	NR	NR	NR

7.4.4 Relevance of available evidence to England's mainstream schools

A small number of pupils requiring alternative assessment of their progress are likely to be attending mainstream schools in England. Towles-Reeves et al. (2009) is a USA-focused article. The legislative context regarding alternative assessment is different in England than it is in the USA. At time of writing this report, statutory guidance in England was for schools to use the P-scales 1-4 for those pupils working below the standard of the national curriculum tests and assessments, and not yet engaged in subject-specific study, and Pre-key stage standards for those working below that standard but engaged in subject-specific study.

Figure 51 Relevance to England's mainstream schools summary: sub-section title here

Dimension	Details
Relevance of participants in the studies	Yes – but specific to pupils with 'significant cognitive difficulties'
Relevance of the research questions of the SRs to mainstream schools	Limited by the focus on American standards
Relevance within England's legislative and Code of Practice context	England's legislative context is different but also recognises the need for alternative assessment of the knowledge and understanding of pupils with moderate-to-severe or profound learning difficulties
Relevance to the educational and external services delivery context in England	Limited – it is likely that the majority of such pupils will attend special rather than mainstream schools
Judgement	Low

References

Systematic reviews

Towles-Reeves, E., Kleinert, H., & Muhomba, M. (2009). Alternate Assessment: Have We Learned Anything New? *Exceptional Children*, *75*, 233-252.

Other references

Browder, D.M., Spooner, F., Algozzine, R., Ahlgrim-Delzell, L., Flowers, C., Karvonen, M. (2003). What we know about and need to know about alternate assessment. *Exceptional Children*, *70* (1), 45-61.

8 Evidence on high quality teaching for pupils with SEND

8.1 Introduction

This chapter addresses two review questions:

> 1 What does high quality teaching mean for pupils with SEND? Are there particular adaptations/considerations?
>
> 2 How should teachers effectively work with learners? For example, to what extent should they ensure that learners have independence and autonomy in their learning in order to support progress?

First, we set the context, based on England's law and statutory guidance.

In January 2019, almost 15% of all pupils in England had special educational needs (DfE, 2019), defined as having a learning difficulty or disability requiring special educational provision (SEP) to be made (DfE, 2015, xiii, p15). The *SEND Code of Practice 0-25 years* (DfE, 2015) views high quality teaching as both a means of **preventing** some SEN and as a first response in **addressing** SEN (see Figure 52).

Figure 52 High quality teaching as preventative of SEN and as special educational provision to meet SEN

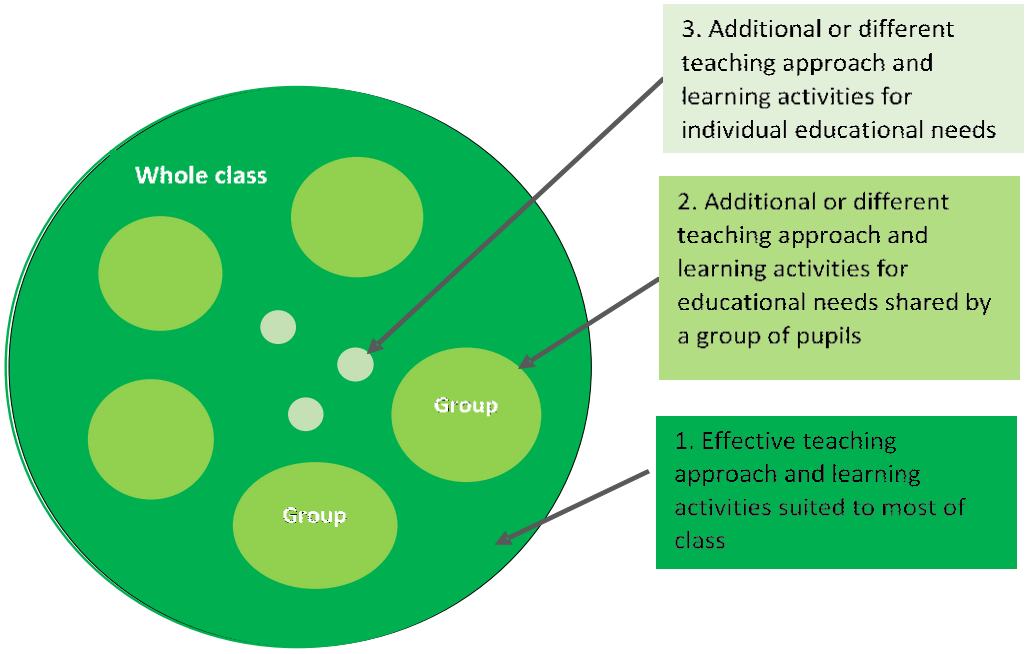
High quality teaching as preventative of special educational needs (SEN) '6.15 A pupil has SEN where their learning difficulty or disability calls for special educational provision, namely provision different from or additional to that normally available to pupils of the same age. Making higher quality teaching normally available to the whole class is likely to mean that fewer pupils will require such support. Such improvements in whole-class provision tend to be more cost effective and sustainable.' *SEND Code of practice, 0-25 years* (DfE, 2015, pp94-95)
High quality teaching as special educational provision (SEP) '6.37 High quality teaching, differentiated for individual pupils, is the first step in responding to pupils who have or may have SEN. Additional intervention and support cannot compensate for a lack of good quality teaching. Schools should […] review[…] and where necessary improve[…] teachers' […] knowledge of the SEN most frequently encountered.' *SEND Code of practice, 0-25 years* (DfE, 2015, p99)

The dual view of high quality teaching set out in the *Code* (see Figure 52) makes sense in the light of Bronfenbrenner's bioecological theory of human development, the theory we have drawn on most in this Review. This states that the main drivers of human development are **everyday activities and interactions**, influenced by individual characteristics, contexts and time. Teachers are able to select the

everyday activities that happen in their classrooms and can model and set the tone for positive everyday **interactions** between teacher and pupils, among pupil peers and between pupils and the educational materials the teacher has chosen for them to engage with. Teachers are also able to manipulate features of the immediate classroom **context** (e.g. seating arrangements) and (within certain constraints) the amount of **time** spent on activities in ways that interact with **individual pupil characteristics** to best enable all pupils in the class to make educational progress.

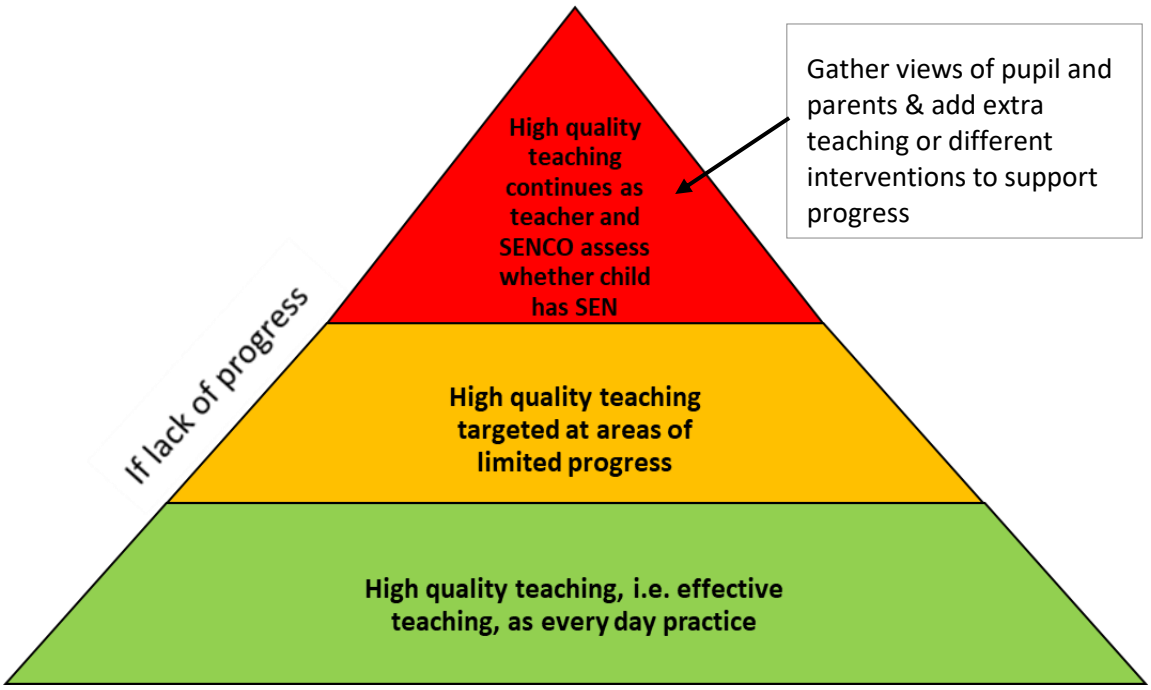
In normal, everyday practice, teachers in mainstream schools in England are expected to differentiate teaching to support the learning of all pupils. Following Lewis and Norwich (2001), often, this is thought of as planning for most pupils, small group/s of pupils with shared areas of weakness, and for a small number of pupils with individual learning needs (see Figure 53).

Figure 53 High quality teaching (i.e. effective teaching) at three levels



If, despite this everyday differentiation, pupils do not make expected levels of progress, then teachers are expected to take **early action** by further refining their use of teaching and learning practices to address the areas of pupil difficulty. If progress is still not as expected, then the teacher is expected to speak to the SENCO and to the parents and to begin considering whether or not the pupil has special educational needs (see Figure 54).

Figure 54 Early action to address lack of progress and to investigate potential SEN

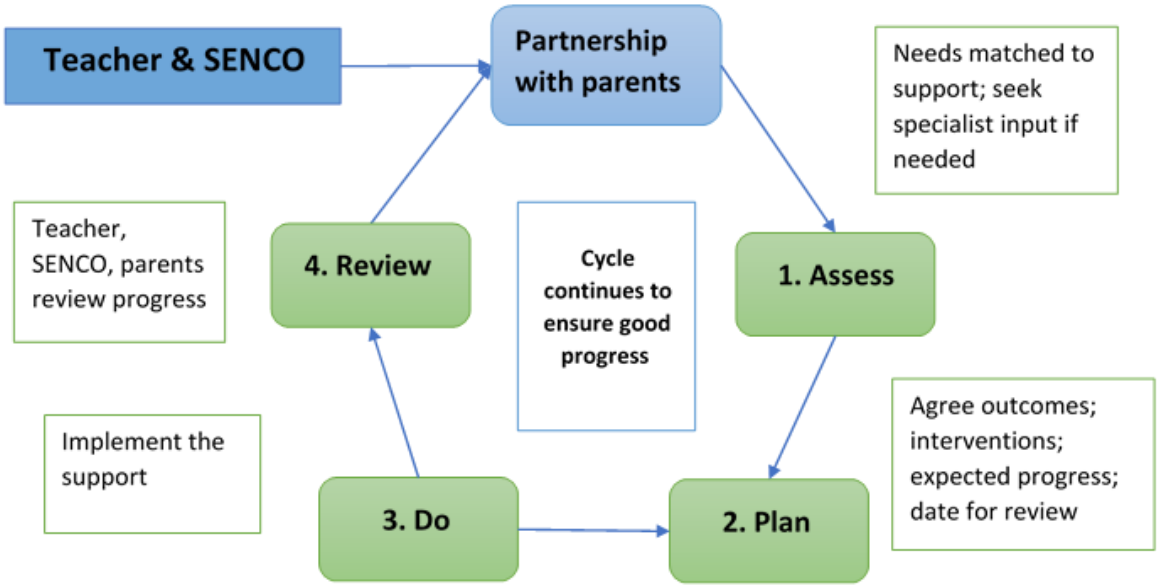


Source: Derived from text in *SEND Code of Practice, 0-25 years* (DfE, 2015,6.37-6.43, p99-100).

Once a pupil is identified as having SEN, then effective **special educational provision (SEP)** must be made. The Code of Practice (DfE, 2015, 6.44 – 6.56, pp100-102) states that this should take the form of the **graduated approach** (see Figure 56), that is:

> "a four-part cycle though which earlier decisions and actions are revisited, refined and revised with a growing understanding of the pupil's needs and what supports the pupil in making good progress and securing good outcomes." (DfE, 2015, 6.44, p100).

Figure 56 The graduated approach to special educational provision



Source: Derived from text *SEND Code of Practice, 0-25 years* (DfE, 2015, 6.44 – 6.56, pp100-102)

High quality teaching that draws on teachers' repertoire of skills to offer something additional and/or different to meet the learning needs of pupils is **the foundation of effective special educational provision**, as it is of effective education for every pupil.

8.2 What does high quality teaching mean for pupils with SEND?

8.2.1 Overview of findings

Based on 38 systematic reviews reporting positive outcomes of teaching approaches for pupils with SEND, it is clear that high quality teaching for pupils with SEND is firmly based on strategies that will either already be in the repertoire of every mainstream school teacher or which can be relatively easily added to it. Compared to teaching other pupils of a similar age, effective teaching for pupils with SEND requires a climate of positive interactions between teachers and pupils and among peers; additional teaching (e.g. teaching more structured steps towards a learning goal); and/or the use of different strategies (e.g. the use of graphic organisers, of mnemonics, of learning scaffolds) or of different interventions (e.g. to support fluency in reading). That is, it requires nothing that is outside of a trained teacher's competence.

This empowering message resonates with England's approach to inclusive education where the teacher retains responsibility and accountability for the progress and development of the pupils in their class (DfE, 2015, 6.36, p99). The teacher's decisions about which additional interventions or strategies to use will likely be informed by discussions with the SENDCO, parents and - especially if the pupil has an education, health and care plan - also by advice from relevant external professionals.

Strength of evidence: strong

Relevance to England's mainstream schools: high

8.2.2 Further details of findings

Our review identified no systematic reviews that precisely addressed our review question, 'What does high quality teaching mean for pupils with SEND?' However, we identified 38 systematic reviews that met our inclusion criteria, addressed a research question about effective teaching for pupils with SEN and reported positive outcomes. The one closest to our review question (Rix et al., 2009) reviewed pedagogical approaches effective in relation to pupils with any type of SEN. Another (Reicrath et al., 2010) was as broad in terms of types of SEN but reviewed only 'interventions' in mainstream classes; finding a huge variety of these, the authors' findings focused only on those related to reading. Another (Parsons et al., 20011) was as broad as our question in terms of pedagogy but focused only on pupils on the autism spectrum. All the other included reviews focused on a particular aspect of learning (e.g. maths or social skills) or on a particular sub-group of pupils with SEN (e.g. those with autistic spectrum disorder or with specific learning difficulties[17]. In reporting the evidence, we make clear when this is the case.

After structured data extraction from these 38 systematic reviews, we found that the findings fitted best with the practices identified in the chapter on 'instruction' from the *High-leverage practices in special education* report from the USA's Council for

[17] 'Specific learning difficulties' is the closest equivalent in England to the relevant USA term 'learning disabilities. See *Figure 3* in Chapter 1.

Exceptional Children and CEEDAR Center (McLeskey et al., 2017). Figure 57 summarises how most of the included systematic reviews mapped on to that framework. One further practice – teaching self-determination skills (see section 8.3) – did not map directly on to that framework but is closely related to high-leverage practice (HLP) 14: 'Teach cognitive and metacognitive strategies to support learning and independence'.

Figure 57 Frequency order mapping of findings onto the instruction high-leverage practices in McLeskey et al. (2017)

Code	Practice headline	Number of included systematic reviews mapping on to this practice
Various	Studies with findings relating to more than one high-leverage practice, including: HLP11 Identify and prioritize long- and short-term learning goals HLP12 Systematically design instruction towards a specific learning goal HLP13 Adapt curriculum tasks and materials for specific learning goals HLP17 Use flexible grouping HLP20 Provide intensive instruction HLP 22 Provide positive and constructive feedback to guide students' learning and behaviour	12
HLP14	Teach cognitive and metacognitive strategies to support learning and independence	7
HLP16	Use explicit instruction (or similar structured, systematic teaching)	4
HLP19	Use assistive and instructional technologies	4
HLP21	Teach students to maintain and generalize new learning across time and settings	3
HLP18	Use strategies to promote active student engagement	2
HLP15	Provide scaffolded supports	1

Source: McLeskey et al. (2017), pp69-95 (Chapter on Instruction)

The findings are presented in two sub-sections: 'Learning happens in interaction with others' and 'Learning happens in interaction with materials and everyday activities'.

These refer to on core features of the drivers of human development as set out in Figure 4 Core features of Bronfenbrenner's bioecological theory in Chapter 2.

8.2.2.1 Learning happens in interactions with others

All humans learn through interaction with others (Bronfenbrenner & Morris, 2006). High quality teaching is based, in part, on creating positive relationships with pupils and supporting the development of positive interactions amongst peers. Teachers set the tone for the interactions that happen in their classrooms (Rix *et al*., 2009).

(a) Promote positive relationships and active pupil engagement

Rix *et al.* (2009), in their review of teaching approaches that were effective in including pupils with SEN in mainstream classes, reported on:

> 'the powerful role the teacher played in shaping interactions and influencing learning opportunities through those interactions. Positive teacher attitudes towards the inclusion of children with special educational needs were reflected in the quality of their interactional patterns with all pupils and, in turn, in their pupils' self concept.' (p7)

They found that teachers who accepted the responsibility for 'the progress and development of the pupils in their class' (DfE, 2015, 6.36, p99) had a high quality of engagement with pupils with SEN. They:

> 'engaged in prolonged interactions with pupils with special educational needs and used most of the available time to offer learners the opportunity to problem-solve, to discuss and describe their ideas, and to make connections with their own experiences and prior understandings. […] Successful interactions, which supported fuller pupil participation, also encouraged pupils to identify their thoughts and assisted them to document them, particularly through one-to-one discussion with the teacher, and often involved elicitation of prior knowledge and understanding. In carrying out these discussions the teacher matched their questions and answers to the pupil's response, following the pupil's thinking rather than just checking that their understanding equated to the teacher's. There was also some evidence to support interactions having a meaningful relationship to learners' daily lives, involving direct experiences and realistic problems, offering multiple opportunities to engage with the learning situation and others within it. ' (p7).

Rix *et al.* (2009) also found that effective teaching included viewing social interaction as an important way of developing the academic and social skills of pupils with SEN. Academic skills were enhanced by peer group interaction – for example, cooperative learning was especially effective in relation to literacy, Circle of Friends in relation to social skills. They concluded that it was within the nexus of teacher-pupil and peer-to-peer relationships that effective, inclusive learning took place:

> '[…] through interactions between teachers and children and among children, academic and social inclusion was enhanced when pedagogical approaches

were planned with, and made explicit, to learners. Effective subject specific learning activities for pupils with special educational needs were seen to begin with an awareness of the needs of the learner and then the development of their understanding, knowledge and skills through small incremental steps, frequently contextualising what was to be learned in the form of a real life or learner-relevant inquiry or problem.' (p7)

These findings map well onto the McLeskey *et al.* (2017) HLP 18, set out in Figure 58.

Figure 58 McLeskey et al. (2017) – high-leverage practice 18

HLP18 Use strategies to promote active student engagement.
Teachers use a variety of instructional strategies that result in active student responding. Active student engagement is critical to academic success. Teachers must initially build positive student–teacher relationships to foster engagement and motivate reluctant learners. They promote engagement by connecting learning to students' lives (e. g., knowing students' academic and cultural backgrounds) and using a variety of teacher-led (e.g., choral responding and response cards), peer-assisted (e. g., cooperative learning and peer tutoring), student-regulated (e.g., self-management), and technology supported strategies shown empirically to increase student engagement. They monitor student engagement and provide positive and constructive feedback to sustain performance.

Source: McLeskey *et al.* (2017), p84

Peer tutoring and peer-mediated interventions are specific approaches to promoting positive peer interactions in mainstream classes that have been found, respectively by Spencer et al., 2006, and Kaya et al., 2015, to be effective also for pupils with 'emotional and behavioural disorders' (equivalent to the now disused term in England, 'emotional and behavioural difficulties'). Peer tutoring can be carried out by same-age peers or across-age peers. As well as peer tutoring, peer mediated interventions also include other peer-to-peer activities such as modelling, mentoring, and assessment. These activities require the teacher to provide explicit instruction on roles and to monitor effectiveness.

Figure 59 Summary of evidence sources re positive relationships and pupil engagement

First author	Desired outcomes: Teaching practice/s	SEND type
Rix, 2009	Improved academic and social outcomes: Peer interactive approaches; positive teacher-pupil interactions; planned, explicit teaching developed through incremental steps and contextualising to real life or learner's interests	Special educational needs
Spencer, 2006	Improved academic skills (e.g. reading, writing, maths): Peer tutoring	Emotional and behavioural disorders*
Kaya, 2015	Improved social skills: Peer-mediated interventions	Emotional and behavioural disorders*

*Equivalent to the now disused term, 'emotional and behavioural difficulties' in England.

(b) Group students flexibly (not fixed groups)

High-quality teaching for pupils with SEN uses grouping of peers meaningfully in relation to specific learning outcomes (see Figure 60).

Figure 60 McLeskey et al. (2017) - high-leverage practice 17

HLP17 Use flexible grouping.
Teachers assign students to homogeneous and heterogeneous groups based on explicit learning goals, monitor peer interactions, and provide positive and corrective feedback to support productive learning. Teachers use small learning groups to accommodate learning differences, promote in-depth academic related interactions, and teach students to work collaboratively. They choose tasks that require collaboration, issue directives that promote productive and autonomous group interactions, and embed strategies that maximize learning opportunities and equalize participation. Teachers promote simultaneous interactions, use procedures to hold students accountable for collective and individual learning, and monitor and sustain group performance through proximity and positive feedback.

Source: McLeskey *et al. (*2017), p82

Effective teaching means groupings of peers are brought together for explicit purposes rather than being fixed. For example, to promote reading fluency, Chard *et al.* (2002) found that, 'using grouping practices that allow more proficient readers to guide less able readers is also an effective way to build fluency [as are having an adult or an audio-taped or computer generated model of fluent reading]' (p404).

Wissinger *et al.* (2018) found that, to improve reading of history texts, structured collaborative interaction among peers was effective. The authors described this as students working in peer-mediated groups to work collaboratively on tasks such as reviewing background information, reading and analysing source documents and completing graphic organisers and in heterogeneous groups to discuss perspectives and analyse historical problems.

Dennis *et al.* (2016), in their examination of the effect of teaching approaches on outcomes for pupils with 'maths learning difficulties' [specific learning difficulties relating to maths], found the largest effect sizes (unbiased effect size estimate = 0.82) for peer-assisted learning. They noted that this may be limited to learning early numeracy concepts, such as 'number combinations, number identification, and number comparisons', as these were the only dependent variables measured in the relevant studies.' (p10)

8.2.2.2 Learning happens also in interactions with materials and everyday activities

High quality teaching is delivered through the judicious choice of developmentally appropriate learning materials and activities that are structured as progressively more complex steps towards learning goals. The effective teaching practices identified in our review, which also corroborated the McLeskey *et al*. (2017) high-leverage practices in special education, reflect the repertoire of skills on which teachers will draw, in varying combinations, to meet the needs of individual pupils. Some of the included reviews highlighted more than one practice effective for particular purposes. We report on these first. Then we report findings from reviews that focused on single strategies.

(a) Use a range of teaching practices to support progress

Twelve included systematic reviews reported positive findings linked to more than one effective teaching strategy for pupils with SEND. Across these twelve, there was coverage of outcomes relating to improvements in general literacy (reading and writing, fluency), literacy related to factual texts (e.g. in history), and to increased knowledge, understanding and skills in maths and in science. The SEND-types covered across these 12 reviews were those with or at risk of SEN ['disabilities', in USA terminology], those with specific learning difficulties ['learning disabilities' in USA terminology] such as dyslexia, dyscalculia, and those with 'emotional and behavioural disorders' [equivalent to emotional and behavioural difficulties in England[18]].

These multiple everyday teaching practices that were found to be effective are summarised in Figure 61, Figure 62 and Figure 63, mapped on to McLeskey et al.'s (2017) high-leverage practices.

In Figure 61 the focus is on literacy.

[18] Since September 2014, this category of need in England is termed, 'social, emotional and mental health difficulties'.

Figure 61 Summary of evidence sources re more than one effective teaching strategy (literacy)

First author	Teaching practice/s	SEN type
Wissinger, 2018	For reading history texts: structured, collaborative, interactive teaching (HLP17) For history writing: explicit cognitive instruction (HLP 14) and scaffolding (HLP15)	With or at risk of learning disabilities [specific learning difficulties (SpLD) in England]
Ciullo, 2016	For understanding informational texts: cognitive strategies (HLP14) and graphic organisers (HLP15)	Learning disabilities [SpLD]
Kang, 2015	For reading and writing: explicit training in cognitive strategies (HLP14/16) and use graphic organisers (HLP15)	Learning disabilities [SpLD]
Reichrath, 2010	For reading: class-wide peer tutoring (HLP17); phonological training (HLP16) For spelling: 'explicit instruction with multiple practice opportunities and corrective feedback' (p574) (HLP16 & HLP22) For reading and general achievement: mnemonic instruction; graphic organisers; class-wide peer tutoring; teacher-prepared notes ('guided notes'); coached elaboration (through teacher questioning); inquiry teaching[19].	Disabilities [SEN in England]
Gajria, 2007	For understanding factual text: cognitive strategy instruction (HLP14) and explicit, systematic instruction (HLP16)	Learning disabilities [SpLD]
Chard, 2002	For reading fluency: 'multiple components focused on increasing rate and accuracy of reading' – opportunities to practice reading with a model of fluent reading - an adult, a tape-recording or computed generated model or flexible grouping to allow better readers to guide less able readers (HLP17) and repeated reading with corrective feedback (HLP22), setting criteria and adjusting difficulty level with progress (HLP12 & 13) (Chard, 2002, p404).	Learning disabilities [SpLD]

*See Figure 3 in Chapter 1 for more on terminology.

[19] Coached elaboration and inquiry teaching were also reported as promoting independent learning (for more on this, see also section 1.2).

In Figure 62, the focus is on numeracy and/or maths.

Figure 62 Summary of evidence sources re more than one effective teaching strategy (numeracy; maths)

First author	Learning goal: Teaching practice/s	SEND type*
Monei, 2017	Individualised training in mental and written calculation (HLP13); Strategy instruction involving explicit practice and feedback (HLP14); small group interventions that are 'intensive, strategic and explicit' (p286) (HLP20); and use of technology to enhance learning (HLP19)	Dyscalculia
Dennis, 2016	For early numeracy concepts: peer-assisted learning (HLP17) More generally: Explicit teacher-led instruction (HLP16) and providing data on maths performance to teachers and students (HLP22)	Mathematics learning difficulties [SpLD in maths]
Zheng, 2012	For word problem-solving: Sequencing, explicit practice, task reduction, advanced organizers, questioning, task difficulty control, elaboration, skill modelling, strategy cues (Multiple HLPs)	Maths disabilities [SpLD in maths]
Mulcahy, 2014	'Promising practices': Strategy instruction (e.g. mnemonics; cover, copy, compare; flashcards); cognitive strategies (e.g. self-monitoring) (HLP14) and peer-mediated interventions (e.g. peer tutoring, peer guided pause, cooperative earning) (HLP 17); technology-based interventions combined with direct instruction (e.g. video-based real world examples; use of iPads) (HLP19 & HLP16)	Emotional and behavioural disorders [emotional and behavioural difficulties]}

*See Figure 3 in Chapter 1 for more on terminology.

Figure 63 focuses on science.

Figure 63 Summary of evidence sources re more than one effective teaching strategy (science)

First author	Learning goal: Teaching practice/s	SEND type
Therrien, 2014	To increase factual knowledge: use of mnemonics (HLP15) 'Emerging evidence' for peer tutoring in science (HLP17)	Emotional and behavioural disorders [emotional and behavioural difficulties]
Therrien, 2011	To increase science achievement: use of keyword mnemonics[20] (HLP15); structured inquiry[21] (HLP 16)	Learning disabilities [specific learning difficulties]

*See Figure 3 in Chapter 1 for more on terminology.

(b) Teach cognitive and metacognitive strategies to support progress

Seven included systematic reviews support the use of teaching cognitive and metacognitive strategies to support learning for pupils with SEN. This corroborates the McLeskey et al. (2017) HLP14, set out in Figure 64.

Figure 64 McLeskey et al. (2017) – high-leverage practice 14

HLP14 Teach cognitive and metacognitive strategies to support learning and independence.
Teachers explicitly teach cognitive and metacognitive processing strategies to support memory, attention, and self-regulation of learning. Learning involves not only understanding content but also using cognitive processes to solve problems, regulate attention, organize thoughts and materials, and monitor one's own thinking. Self-regulation and metacognitive strategy instruction is integrated into lessons on academic content through modeling and explicit instruction. Students learn to monitor and evaluate their performance in relation to explicit goals and make necessary adjustments to improve learning.

Source: McLeskey et al. (2017), p76

[20] Keyword mnemonics: 'the keyword refers to a chosen word to represent a given vocabulary word […] The keyword is paired with an illustration demonstrating how the keyword is related to the vocabulary word. The keyword and illustration are used as a prompt for students to redevelop the correct definition of the represented vocabulary word.' (Therrien et al., 2011, p191). The mean effect size was very large (*g* = 1.997).

[21] Structured inquiry involved structured hands-on experiments, student collaboration to make and share predictions, teacher formative feedback, and student writing and/or drawing to summarize te findings.' ((Therrien et al., 2011, p191). The mean effect size was medium-to-large (*g* = .727).

Teaching pupils with SEN to use cognitive and metacognitive strategies is a very effective aspect of high-quality teaching. This is demonstrated by the large effect sizes reported in systematic reviews. For example, Sencibaugh et al. (2005) reports a large effect size for paragraph restatement (delta = 3.65), Berkley et al. (2018) reports self-regulation strategies (such as 'think aloud') produced large effect sizes for immediate and maintenance measures or reading comprehension and, importantly, also moderate effect sizes for generalised reading comprehension, indicating that:

> […] strategy use was internalized and sustained by students who received instruction in reading comprehension strategies that contained self-regulation elements' (Berkley & Larsen, 2018, p83).

Graphic organisers[22] are used to organise knowledge, concepts and ideas. Examples include Venn diagrams, T-charts of pros and cons, mind-maps, cognitive maps, semantic maps, and chronologies or event chains. As a cognitive strategy, they can be effective tools for supporting learning, including for pupils with SEND. For example, a meta-analysis of their use with pupils with 'learning disabilities' [specific learning difficulties (SpLD)] by Dexter & Hughes (2011) found large weighted mean effect sizes at post-test and medium weighted mean effect sizes for maintenance over time. These authors noted, however, that all the studies had been conducted in resource classrooms i.e. outside the mainstream class. Nevertheless they concluded that teachers should be persuaded by their evidence, 'to make well-planned and well-instructed use of GOs [graphic organisers]' (p70).

Mnemonics[23], a memory association technique, is another cognitive strategy with strong evidence of effectiveness for pupils with SEN. For example, as noted above, Therrien et al. (2011, 2014) reported their effectiveness in teaching science. As another example, Wolgemuth et al. (2008) reported very large positive effects on learning academic content.

[22] A short informative video on using graphic organisers in teaching is freely available here: https://www.youtube.com/watch?v=uU0v8eFO53g

[23] A useful resource on mnemonics can be found here: http://www.mempowered.com/mnemonics and, specifically for working with pupils with intellectual and developmental disabilities, here: https://juniperpublishers.com/gjidd/pdf/GJIDD.MS.ID.555587.pdf

Figure 65 Keyword mnemonics

Keyword mnemonic type	Description
Keyword	The keyword has visual and auditory cues to provide a direct link to the new vocabulary word. It uses what a word sounds like to visualise something memorable that will help recall the definition of the word. E.g. for 'ranid', meaning frog, the keyword was 'rain' and the picture was of a frog leaping about in rain.
Keyword-pegword	This is often used when numbered or ordered information is associated with what is to be remembered. Keywords are combined with rhyming pegwords for numbers (e.g. one = bun, two = shoe) in an interacting picture.
Reconstructive elaborations	Used to help remember subject content. Can be symbolic, mimetic, acoustic or first letter.

Source: Based on text in Wolgemuth, Cobb & Alwell, 2008, p6, plus the sources in footnote 7.

Teaching metacognitive strategies such as self-regulation, planning and monitoring are also effective high-quality teaching for pupils with SEN. Examples, when writing persuasive-style essays, in the Valasa et al. (2014) systematic review of essay-writing interventions for pupils with 'high incidence disabilities'[24], included using:

- TREE (Topic sentence, Reasons, Examine reasons, Ending), or
- POW (Pick my ideas, Organize my notes, Write and say more) + TREE,
- or strategy instruction (e.g. modelling, collaborative planning, scaffolding, drafting/revising, and collaborative revising).

Figure 66 summarises the evidence sources we have drawn on regarding the effectiveness of teaching cognitive and metacognitive strategies to pupils with various types of SEND.

[24] See Figure 3 in Chapter 1 for more on terminology.

Figure 66 Summary of evidence sources re effectiveness of teaching cognitive and metacognitive strategies

First author	Learning goal: Teaching practice/s	SEND type*
Sencibaugh, 2005	For reading comprehension: Metacognitive teaching strategies (e.g. semantic feature graphic organiser, paragraph restatement)	Learning disabilities [specific learning difficulties (SpLD)]
Berkeley, 2018	For reading comprehension: Pupil self-regulation (e.g. think aloud, goal-setting)	Learning disabilities [SpLD]
Valasa, 2014	For essay writing: Self-regulation Strategy Development (see p74) and strategy instruction – p90	High incidence disabilities
Boyle, 2012	For note-taking: Teaching note-taking using guided notes or strategic note-taking techniques	Disabilities [SEN]
Dexter, 2011	For understanding of core subject material: Use of graphic organisers	Learning disabilities [SpLD]
Wanzek, 2010	For reading: Cognitive (e.g. preview text to connect with their knowledge) and metacognitive (e.g. self-questioning, self-regulation) strategies	Learning disabilities [SpLD]
Wolgemuth, 2008	General academic performance: Use of mnemonics	Disabilities [SEN]

*See Figure 3 in Chapter 1 for more on terminology.

(C) Provide scaffolding for learning

Providing scaffolding for learning tasks can be viewed as a sub-category of providing cognitive supports. A key distinction is that scaffolded support is gradually removed as learning skill and confidence grows. It is therefore also linked to dynamic assessment. One included systematic review (Belland, Walker & Kim, 2017) explored the effectiveness of computer-based scaffolding in STEM subjects (science, technology, engineering, mathematics). This confirmed the well-established

effectiveness of scaffolded support for pupils with SEN (McLeskey, 2017; see Figure 67). In the Belland *et al*., review, the effect of computer-based scaffolding for pupils with 'learning disabilities' [SpLD in England] was strongest in 'elementary school' (equivalent to English primary school) for maths. The effect size was very large: ($\bar{g}$= 3.13). Belland *et al*. (2017, pp1064-5) explained this by the known effectiveness of dynamic assessment for pupils with 'learning disabilities' [SpLD], the scaffolding support was based on minimising struggle, something, 'shared by direct instruction – a very successful strategy among this population' (p1065) and because these pupils pre-test scores were low, leaving room for large improvements.

Figure 67 McLeskey et al. (2017) – high-leverage practice 15

HLP15 Provide scaffolded supports.
Scaffolded supports provide temporary assistance to students so they can successfully complete tasks that they cannot yet do independently and with a high rate of success. Teachers select powerful visual, verbal, and written supports; carefully calibrate them to students' performance and understanding in relation to learning tasks; use them flexibly; evaluate their effectiveness; and gradually remove them once they are no longer needed. Some supports are planned prior to lessons and some are provided responsively during instruction.

Source: McLeskey et al. (2017), p78.

(d) Teach in a structured, systematic way

Four of the included systematic reviews reported on the effectiveness of structured, systematic teaching for pupils with different types of SEND (see Figure 68), in terms of raising academic skills in reading and maths.

Figure 68 Summary of evidence sources re effectiveness of structured, systematic teaching

First author	Teaching practice/s	SEN type
Dessemontet, 2019	Word and non-word reading (decoding): Teaching phonics using a systematic, direct instruction approach, four or five times a week either one-to-one or in small group	Intellectual disabilities [moderate-to-severe learning difficulties (MLD-SLD)]
Afacan, 2018	Reading: "to integrate several evidence-based strategies such as direct instruction, time delay, repeated trials, and read aloud into a multicomponent [reading] program." (p238)	Intellectual disabilities [MLD-SLD]
Hudson, 2018	Maths skills: Systematic instruction practices e.g. 'least prompts' and 'constant time delay'	Significant cognitive disabilities
Hwang, 2018	Understanding fractions: a) Sequential multiple representations; b) Contextualised video instruction that involved some components of explicit instruction and hands-on activities (p57)	Maths difficulties or learning disabilities [SpLD]
Park, 2016	Social skills: Job-related social skills training – direct instruction had the greatest effect size (d = 0.72)	Disabilities [SEN]

*See Figure 3 in Chapter 1 for more on terminology.

For pupils with 'intellectual disabilities' [moderate-to-severe learning difficulties], Dessemontet *et al.* (2019) found positive effects on decoding skills – small to very large: g = 0.43 – 3.24 - of regular and systematic teaching of phonics in one-to-one or small group settings when a direct teaching approach was used. Afacan, Wilkerson & Ruppar (2018) also found that pupils with 'intellectual disabilities' significantly improved their reading skills when directly taught using the multi-component approaches used for typically developing pupils rather than the 'special education' single skill approach, such as sight word reading. In teaching maths, too, teacher-led systematic instruction with explicit fading procedures, using real world examples, plenty opportunities to respond, constant time delay and least prompts has been shown to be effective (Hudson, Rivera & Grady, 2018).

Focusing on teaching fractions to pupils with maths difficulties or 'learning disabilities' [SpLD], Hwang, Riccomini, Hwang & Morano, 2018, found that explicit teaching supported the beneficial effects of using contextualised videos (i.e. real world examples) and using different ways to illustrate the properties of a fraction ('sequential multiple representations', p57).

Explicit teaching is also one of the high-leverage practices for special education highlighted by McLeskey et al. (2017). Their description is set out in Figure 69.

Figure 69 McLeskey et al., 2017 – high-leverage practice 16

HLP16 Use explicit instruction.
Teachers make content, skills, and concepts explicit by showing and telling students what to do or think while solving problems, enacting strategies, completing tasks, and classifying concepts. Teachers use explicit instruction when students are learning new material and complex concepts and skills. They strategically choose examples and non-examples and language to facilitate student understanding, anticipate common misconceptions, highlight essential content, and remove distracting information. They model and scaffold steps or processes needed to understand content and concepts, apply skills, and complete tasks successfully and independently.

Source: McLeskey et al. (2017), p80

(e) Use technology to remove barriers and to support learning

Four included systematic reviews focused on the effectiveness of using everyday technology, such as computers, iPads and iPods, in teaching pupils with various types of SEND (see Figure 70). All four found positive results.

Figure 70 Summary of evidence sources re effectiveness of incorporating technological aids

First author	Learning goal: Teaching practice/s	SEND type
Ok, 2017	General academic performance and engagement: Use of iPods or iPads	Disabilities [SEN]
Odom. 2015	General academic performance: Use of computer technology to provide models or prompts, to support self-monitoring by providing performance feedback or to teach skills or concepts systematically.	Autism spectrum disorder (ASD)
Kagohara, 2013	General academic performance: Use of iPods or iPads if used with 'well-established instructional	Developmental disabilities*

	procedures based on the principles of applied behaviour analysis' (p155)	
Parsons, 2011	Reading skills: Computer based approaches to support, e.g., vocabulary reading skills, symbol recognition and other learning.	Autism spectrum disorder (ASD)

*See Figure 3 in Chapter 1 for more on terminology.

Ok & Kim (2017) reported strong effects for enhancement of academic performance of pupils with 'disabilities' [SEN] and strong to medium effects on pupil engagements. The teachers in their included studies used instructional apps, for example, to provide modelling and/or practice opportunities in relation to a wide variety of target skills; non-instructional apps to provide tools such as note-taking; and speech-generating apps to augment the communication skills of pupils with communication difficulties. However, as Ok & Kim noted, 'technology is a vehicle to deliver instruction [i.e. teaching]' (p72), so teachers need to choose the videos and apps with the same care as they would choose other teaching material and should expect to have to teach the pupils how to use the apps.

Kagohara et al. (2013) focused on the use of iPods, iPads and similar devices in the education of pupils with 'developmental disabilities'. They concluded that these were, 'viable technological aids for individuals with developmental disabilities […] for a variety of purposes: specifically for the enhancement of academic, communication, leisure, employment skills and transitioning skills' (p154). They make the point that:

> '[…] such devices are readily available, relatively inexpensive, and appear to be intuitive to operate. [They] also seem to be socially accepted and thus perhaps less stigmatizing when used as assistive technology aids (e.g. as SGDs [speech-generating devices]) by individual with developmental disabilities.' (p155).

Parsons et al. (2011) included studies of computer-based approaches in their review of evidence on best practice for educational provision for children on the autism spectrum. Based on three studies showing positive results for how computers can be used to support vocabulary learning, reading skills and symbol recognition, they concluded that, 'This is promising for supporting learning in the classroom, especially now that many schools are well-equipped with information and communication technology resources' (p55). In a more recent review of technology-aided teaching for adolescents with autism spectrum disorder, Odom et al. (2015) reported positively on studies using a variety of technologies (desktop computers, laptops, videotapes, iPods, personal digital assistants (PDAs], interactive whiteboards,) for seven different purposes, such as modelling behaviour or academic skills, providing a visual prompt to engage in learning, delivering academic content, and providing performance feedback.

These systematic reviews corroborate the McLeskey et al. (2017) finding that use of technology for assistive and teaching purposes is a high-leverage practice for pupils with SEND. Figure 71 provides their summary. The universal design for learning (UDL) framework that is mentioned in that summary did not come up in our review. Further information about it can be found here: http://udlguidelines.cast.org/

Figure 71 McLeskey et al., 2017 – high-leverage practice 19

HLP19 Use assistive and instructional technologies.
Teachers select and implement assistive and instructional technologies to support the needs of students with disabilities. They select and use augmentative and alternative communication devices and assistive and instructional technology products to promote student learning and independence. They evaluate new technology options given student needs; make informed instructional decisions grounded in evidence, professional wisdom, and students' IEP* goals; and advocate for administrative support in technology implementation. Teachers use the universal design for learning (UDL) framework to select, design, implement, and evaluate important student outcomes. [*IEP = individual education plan, which is similar to an education, health and care plan in England, rather than the document called an IEP in England.]

Source: McLeskey et al. (2017), p87

(f) Teach for generalisation of knowledge and skills

High-quality teaching includes teaching pupils to generalise new knowledge and skills to different contexts and to maintain these over time. This is also true of high-quality teaching for pupils with SEN (Figure 72).

Figure 72 McLeskey et al. (2017) – high-leverage practice 21

HLP21 Teach students to maintain and generalize new learning across time and settings.
Effective teachers use specific techniques to teach students to generalize and maintain newly acquired knowledge and skills. Using numerous examples in designing and delivering instruction requires students to apply what they have learned in other settings. Educators promote maintenance by systematically using schedules of reinforcement, providing frequent material reviews, and teaching skills that are reinforced by the natural environment beyond the classroom. Students learn to use new knowledge and skills in places and situations other than the original learning environment and maintain their use in the absence of ongoing instruction.

Source: McLeskey et al. (2017), p91

Three included systematic reviews considered this aspect of teaching pupils with SEN (Figure 73); all reiterated the importance of teaching for generalisation of skills whether academic (Sartini et al., 2018; Hwang et al., 2016) or social skills (Gates, 2017). In maths problem-solving, this was most effectively done through providing plenty opportunities to apply maths skills to problems set in real-world contexts (Hwang et al., 2016). Providing multiple opportunities to practice social skills was found to be effective for pupils with autism spectrum disorder (Gates et al., 2017). The use of multiple exemplars was also found to be an effective (though not the only) way to teach generalisation of text comprehension to pupils on the autism spectrum: strategy instruction was also effective.

Figure 73 Summary of evidence source re effectiveness of teaching for generalisation

First author	Learning goal: Teaching practice/s	SEND type
Sartini, 2018	Text comprehension: Generalisation strategies e.g. multiple exemplars	Autism spectrum disorder
Gates, 2017	Social skills: Opportunities to learn and practice social skills	Autism spectrum disorder
Hwang, 2016	Maths problem solving: Generalisation to different contexts e.g. to similar problems or (most effective) using contextualised problems ('rich real-world-like contexts', p179)	With or at risk of learning disabilities [specific learning difficulties]

8.2.3 Evidence base for findings

Some of the included reviews used recognised quality standards, such as the Center for Exceptional Children's quality standards (Cook et al., 2014) as inclusion criteria. For example, Dessemontet et al. (2018) used these criteria and were able to conclude that phonics instruction is an evidence-based practice for teaching decoding skills to pupils with 'intellectual disabilities' [moderate-to-severe learning difficulties]. Other systematic reviews had looser inclusion criteria. Despite limitations expressed by respective authors as to the lower quality of some studies included in their reviews (e.g. in Mulcahy et al., 2014 and in Reichratch et al., 2010), the overall strength of the evidence is strong. This judgement is based on accumulation of evidence and the consistency with which multiple systematic reviews corroborated the effectiveness of certain teaching practices for pupils with special educational needs.

Figure 74 Strength of evidence summary: What does high quality teaching mean for pupils with SEND?

Dimension	Details
Place on 'development of theory' to 'evidence-based practice' line	All are 'evidence-based practices'
Number of systematic reviews (SRs) showing positive results	38
Precision of these results	Varied but acceptable
Total number of included studies in these SRs	661
Total number of relevant participants in these SRs	21,816
Study designs of included studies in these SRs	Varied but 23 of 38 included only stronger research designs (random controlled trials, quasi-experimental designs, single case experimental designs)
Quality assurance of included studies in these SRs	13 of 38 stated that they assessed quality of included studies using a published tool
Judgement	Strong

Figure 75 provides, as an example, a structured summary of one included review. This represents an extract from the data extraction format used for all the systematic reviews drawn upon to answer this review question.

Figure 75 Example of structured summary of systematic reviews used to answer review question: What does high quality teaching mean for pupils with SEND?

First author	Date of SR	**Teaching practices list**	**Q4. Did the review's authors […] assess quality of the included studies?**	**Number of studies on which findings relevant to our review are based**	**Number of participants relevant to our review about whom findings are reported**	**Number of participants about whom findings are reported relevant to PRIMARY**	**Number of participants about whom findings are reported relevant to SECONDARY schools (or**	Is evidence subject-specific?	Is evidence SEN-type specific?
Sermier Dessemontet	2019	phonics instruction	Yes, p56, "Council for Exceptional Children [CEC] for experimental or quasi-experimental studies and for single-case experimental studies (Cook et al., 2014)."	14, p58	297, p60	Not clear but "most between 5-14 years", p60	Not clear but "most between 5-14 years", p60	No - reading	Yes - 'intellectual disabilities' [English equivalent: moderate or more severe learning difficulties]

8.2.4 Relevance of available evidence to England's mainstream schools

The majority of the systematic reviews included were written by scholars based at American universities, with others written, for example, by academics at English and New Zealand universities. However, all the reviews were based on international searches of academic literature published in English making the findings relevant to a Western international audience. All the studies asked research questions that are relevant to teaching in mainstream schools in England. The participants included pupils equivalent to primary-school-age (27 reviews) and secondary-school-age (25 reviews).

Figure 76 Relevance to England's mainstream schools summary: What does high quality teaching mean for pupils with SEND?

Dimension	Details
Relevance of participants in the studies	Relevant to both primary and secondary schools
Relevance of the research questions of the systematic reviews (SRs) to mainstream schools	High
Relevance within England's legislative and Code of Practice context	High
Relevance to the educational and external services delivery context in England	High
Judgement	Highly relevant

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8.3 How should teachers effectively work with learners with SEND? For example, to what extent should they ensure that learners have independence and autonomy in their learning in order to support progress?

8.3.1 Overview of findings

We found one systematic review (Fowler, Konrad, Walker, Test & Wood, 2007) relevant to this review question. It focused on self-determination as a way of building academic skills for pupils with moderate-to-severe learning difficulties. Combinations of self-determination strategies, such as self-management, goal setting and problem solving, were found to be more effective than single strategies with this population of pupils. Other high-quality teaching strategies, such as teaching cognitive and meta-cognitive skills, noted in section 8.2 also fostered learner independence and autonomy.

Strength of evidence: medium to strong

Relevance to England's mainstream schools: high

8.3.2 Further details of findings

We found one systematic review that addressed a topic relevant to this review question (Fowler, Konrad, Walker, Test & Wood, 2007). The population of interest to them was pupils with 'mental retardation and developmental disabilities', a group that would be labelled in the English education system as having 'moderate to severe learning difficulties' or possibly 'learning disabilities'. The purpose of the Fowler et al. (2007) systematic review was: 'to identify, describe and synthesize studies that have examined the effectiveness of self-determination interventions on the academic skills of students with mental retardation and developmental disabilities' (Fowler, et al, 2007, pp271-2). The self-determination skills (see Figure 77) were examined in relation to their impact on academic skills in any subject area that involved, 'reading, writing, math, or spelling' (p272).

Figure 77 Self-determination skills as defined in Fowler et al. (2007)

> '[…] a self-determination intervention included one or more of the following skills: choice making, decision making, problem solving, goal setting and attainment, self advocacy, self-awareness, self-management, or self-efficacy (Algozzine et al., 2001; Wehmeyer,1999).' (p272)

The Fowler et al. (2017) review found that:

> 'Effects were generally stronger for organization skills in academic assignments than for more traditional academic measures, such as spelling, assignment accuracy or math assignment productivity. Similarly, effects were stronger for productivity of both maths and language arts assignments than for accuracy measures (p 280-281). [...] in this review of self-determination as a method of promoting academic skills, combined strategies of self-management, goal setting, and problem solving were found to be most

effective and used most frequently with this population. Self-management strategies alone were also used widely with this population to promote academic skills. It is important to note that in the one study in which choice making was used as the intervention, the results on academic productivity and accuracy were powerful. However, [...] choice-making was used alone in only one of the academic studies reviewed.' (p.282)

Learner independence and autonomy is also fostered by other high-quality teaching practices covered in section 8.2. For example, independence and autonomy is also fostered by teaching cognitive and metacognitive skills (HLP14), by the fading of scaffolded learning supports (HLP15) and by some uses of assistive and instructional technology (HLP19).

8.3.3 Evidence base for findings

Based on the one included systematic review, the strength of evidence is medium. The review included a small number of studies and was able to report effect sizes for seven of the 11 studies. It also focused only on one type of SEN. However, once the wider evidence discussed in section 8.2 is also taken into account (that is, in relation to teaching cognitive and metacognitive skills, by the fading of scaffolded learning supports and by some uses of assistive and instructional technology), the evidence base can be viewed as strong.

Figure 78 Strength of evidence summary: Independence and autonomy in learning

Dimension	Details
Place on 'development of theory' to 'evidence-based practice' line	Moving towards 'evidence-based practice'
Number of systematic reviews (SRs) showing positive results	1
Precision of these results	Not reported
Total number of studies included in these SRs	11
Total number of relevant participants in these SRs	156
Study designs of studies included in these SRs	10 single case design; 1 experimental group design
Quality assurance of studies included in these SRs	Yes
Judgement	Medium (stronger once wider evidence is taken into account, as discussed in the text).

Figure 79 Systematic review relevant to RQ: To what extent should teachers ensure that learners have independence and autonomy in their learning in order to support progress?

First author	Date of SR	Teaching practices list	Q4. Did the review's authors [...] assess quality of the included studies?	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of participants about whom findings are reported relevant to PRIMARY	Number of participants about whom findings are reported relevant to SECONDARY schools (or	Is evidence subject-specific?	Is evidence SEN-type specific?
Fowler	2007	self-determination interventions: self-management, goal setting, problem solving, choice-making	"quality indicators for group designs described by Gersten et al. (2005) and for single subject designed described by Horner et al. (2005) were used to analyze the research quality of each study" (p.273)	11	156	Not clear "Seven (63.6%) took place in general education classrooms at the elemntary, middle and high school levels" (p.276)	Not clear - "Seven (63.6%) took place in general education classrooms at the elemntary, middle and high school levels" (p.276)	No - not subject-specific	Yes - to 'Mental retardation and developmental disabilities'/'cognitive disabilities' [English equivalent: moderate or more severe learning difficulties]

8.3.4 Relevance of available evidence to England's mainstream schools

In England, the principles on which Children and Families Act 2014, and the *SEND Code of Practice 0-25 years* (DfE, 2015) are based include effective preparation for adulthood (DfE, 2015, 1.1, p19). This is to be achieved in part through, 'the participation of children […] and young people in decision-making' and 'greater choice and control for young people […] over support' ((DfE, 2015,1.2, p19). Chapter 8 ('Preparing for adulthood from the earliest years', pp120-140) provides much more detail about how school staff and others can work together to prepare young people with SEN for adulthood. Although the term, 'self-determination' is not used, the concept is there in the emphasis on enabling and supporting young people to make decisions for themselves. Thus, although the Fowler et al. (2007) systematic review was written with a USA context in mind, the findings are relevant to the context in which mainstream schools in England operate when supporting pupils with SEND, in this case, those with moderate or moderate to severe learning difficulties.

Further information about supporting pupils with SEN to prepare for adulthood in the English context can be found here: https://www.preparingforadulthood.org.uk/

Figure 80 Relevance to England's mainstream schools summary: sub-section title here

Dimension	Details
Relevance of participants in the studies	Participants were those with moderate and moderate to severe learning difficulties
Relevance of the research questions of the SRs to mainstream schools	Relevant
Relevance within England's legislative and Code of Practice context	Relevant
Relevance to the educational and external services delivery context in England	Relevant
Judgement	Highly relevant

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Appendix to Chapter 8

The following are high-leverage practices (HLPs) in special education, as identified by the McLeskey et al. (2017) report. These are not included in the chapter because we did not find systematic reviews where findings focused on these practices. However, each was included in at least one of the reviews where the findings mapped on to multiple HLPs.

HLP11 Identify and prioritize long- and short-term learning goals.
Teachers prioritize what is most important for students to learn by providing meaningful access to and success in the general education and other contextually relevant curricula. Teachers use grade-level standards, assessment data and learning progressions, students' prior knowledge, and IEP goals and benchmarks to make decisions about what is most crucial to emphasize, and develop long- and short-term goals accordingly. They understand essential curriculum components, identify essential prerequisites and foundations, and assess student performance in relation to these components.

Source: McLeskey et al. (2017), p70

HLP12 Systematically design instruction toward a specific learning goal.
Teachers help students to develop important concepts and skills that provide the foundation for more complex learning. Teachers sequence lessons that build on each other and make connections explicit, in both planning and delivery. They activate students' prior knowledge and show how each lesson "fits" with previous ones. Planning involves careful consideration of learning goals, what is involved in reaching the goals, and allocating time accordingly. Ongoing changes (e.g., pacing, examples) occur throughout the sequence based on student performance.

Source: McLeskey et al. (2017), p72

HLP13 Adapt curriculum tasks and materials for specific learning goals.
Teachers assess individual student needs and adapt curriculum materials and tasks so that students can meet instructional goals. Teachers select materials and tasks based on student needs; use relevant technology; and make modifications by highlighting relevant information, changing task directions, and decreasing amounts of material. Teachers make strategic decisions on content coverage (i.e., essential curriculum elements), meaningfulness of tasks to meet stated goals, and criteria for student success.

Source: McLeskey et al. (2017), p74

HLP20 Provide intensive instruction.
Teachers match the intensity of instruction to the intensity of the student's learning and behavioral challenges. Intensive instruction involves working with students with similar needs on a small number of high priority, clearly defined skills or concepts critical to academic success. Teachers group students based on common learning needs; clearly define learning goals; and use systematic, explicit, and well-paced instruction. They frequently monitor students' progress and adjust their instruction accordingly. Within intensive instruction, students have many opportunities to respond and receive immediate, corrective feedback with teachers and peers to practice what they are learning.

Source: McLeskey et al. (2017), p89

HLP22 Provide positive and constructive feedback to guide students' learning and behavior.
The purpose of feedback is to guide student learning and behavior and increase student motivation, engagement, and independence, leading to improved student learning and behavior. Effective feedback must be strategically delivered and goal directed; feedback is most effective when the learner has a goal and the feedback informs the learner regarding areas needing improvement and ways to improve performance. Feedback may be verbal, nonverbal, or written, and should be timely, contingent, genuine, meaningful, age appropriate, and at rates commensurate with task and phase of learning (i.e., acquisition, fluency, maintenance). Teachers should provide ongoing feedback until learners reach their established learning goals.

Source: McLeskey et al. (2017), p93

9 Evidence on using targeted interventions effectively

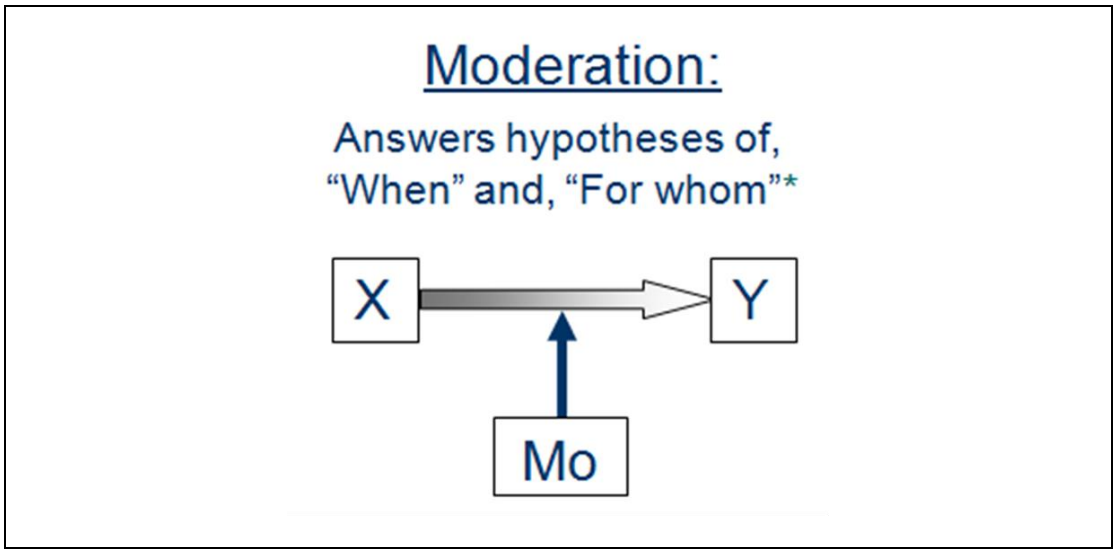
9.1 Introduction

This chapter seeks to answer the review question:

- What factors, in general, make using targeted interventions for pupils with SEND more effective?

The focus is on factors that have been shown to 'moderate' the effectiveness of interventions[25]. Moderation analysis is a statistical approach that tests whether the relationship between two variables depends on ('is moderated') by a third variable (Figure 81). In research on the effectiveness of targeted interventions, moderation analysis tests whether the outcomes of an intervention depend on something else, such as the size of the group or the age of the pupils.

Figure 81 Moderation diagram[26]



This chapter is somewhat different from others in the report. It is best understood in light of Bronfenbrenner's bioecological model of human development, introduced in Part 1. Teaching using targeted interventions is, in Bronfenbrenner's terms, part of the developmentally important 'proximal processes' happening in a pupil's microsystem. This chapter focuses on evidence about the systematic variation in outcomes dependent on: variants of teaching practices, and on the personal characteristics, context, and time factors that interact with the intervention to make it more or less effective in enhancing pupil outcomes. (See Figure 82).

[25] The EEF clarified that the focus of this topic was not implementation science. Nevertheless, it is important that school staff are aware of the critical role that effective implementation plays in achieving the positive effects of evidence-based interventions: "implementation is the critical link between research and practice" (Cook & Odom, 2013, p138).

[26] Thanks to our colleague, Dr Tom Bailey, for this diagram.

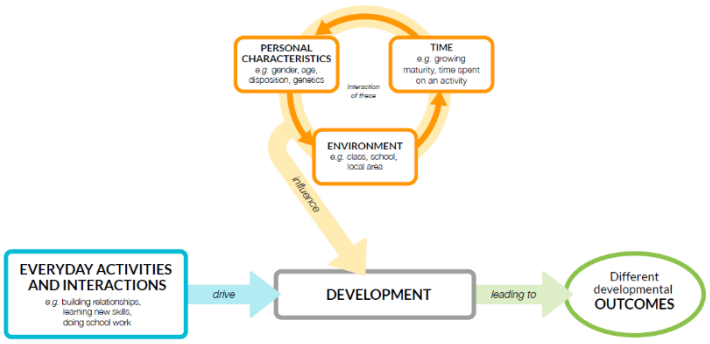
Figure 82 Features of Bronfenbrenner's bioecological model of human development, relevant to this chapter

- Proximal processes - "[…] processes of progressively more complex reciprocal interaction between an active evolving biopsychological human […] and the persons, objects, and symbols in its immediate external environment.
    - E.g. teaching practices in a classroom

- Microsystem – "a pattern of **activities, social roles**, and **interpersonal relations** experienced by the developing person in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit, or inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment' (2006, p814)
    - E.g activities and relationships in a classroom

- "The form, power, content and direction of proximal processes affecting development vary systematically as a joint function of the characteristics of:
    - The developing person [**Person**]
    - The environment – both immediate and more remote – in which the processes are taking place [**Context**]
    - The nature of the developmental outcomes under consideration
    - The social continuities and changes occurring over time through the lifecourse and the historical period during which the person has lived." [**Time**]
    - i.e. these have a 'mutually reinforcing, multiplicative, indirect effect on the power of proximal processes as the "engines of development"'

Bronfenbrenner & Morris (2006, p798; p801)



9.2 What factors, in general, make using targeted interventions for pupils with SEND more effective?

9.2.1 Overview of findings

Our findings are based on moderation analyses reported in 29 systematic reviews of targeted interventions for pupils with special educational needs. We found a relatively small number of factors that made a difference to interventions' effectiveness. The specific effects varied by intervention. For the purposes of this review, the main finding is that, when choosing a targeted intervention to address needs of pupils with SEND, teachers can increase the chances of the intervention being effective by checking that it is a good fit for their context. In particular, the teacher should check that the intervention has evidence of effectiveness for:

> (a) the teaching approaches that are possible in their context (proximal processes factors);
>
> (b) the characteristics of the pupils and staff involved (person factors e.g. gender and ethnicity of the pupils, trained staff);
>
> (c) their setting (context factors e.g. the size of group, the type of school); and
>
> (d) time factors (e.g. age of pupils, number, frequency and duration of sessions).

Strength of evidence: high

Relevance to England's mainstream schools: high

9.2.2 Further details of findings

We found that the most frequent type of moderator of targeted intervention effectiveness were variants of teaching approaches/strategies ('proximal processes'). This was identified in 17 systematic reviews[27]. Examples included use of embedded instruction, direct instruction, peer tutoring, rewards, modelling, and positive teacher-pupil relationship. This finding is in line with their importance in the bioecological theory of human development.

Factors relating to the person characteristics of the pupils and/or the teacher (or other person delivering the intervention) combined to make this the second most frequent type of moderator of effectiveness (N = 14). Examples included pupil characteristics such as type of SEND, 'disability' status [USA terminology], ethnicity, academic skills or prior knowledge. Staff-related characteristics included, for example, having been trained in the intervention, self-monitoring, and ability to implement the intervention with fidelity.

[27] Please note throughout this section that some reviews investigated more than one potential moderator of effectiveness.

Time was the third most frequently identified type of moderator (N = 11). This encompassed when an intervention happened in the life course of a pupil (age and stage) and also factors relating to the length, frequency and duration of sessions of the intervention or of opportunities for pupils to respond and to practice.

The immediate context (microsystem) in which the intervention took place was identified as a moderator of effectiveness in eight of the systematic reviews. Examples of relevant contextual features included the size of the small group for group teaching, whether the intervention was delivered in a group or individually, and the type of class (USA context: special versus general education classes) or type of school (USA context: public [i.e. state] versus private school).

9.2.3 Evidence base for findings

We reviewed 61 systematic reviews of targeted interventions for pupils with special educational needs. Of these, 29 included moderator analyses of effectiveness. Our findings are based on these analyses. These systematic reviews covered a broad range of targeted intervention for a wide range of types of SEND (see reference list). The weight of the evidence lies in the consistency with which a core group of factors were found to moderate effectiveness of outcomes. This means we can be confident that these factors are ones that teachers should check when choosing an intervention (see Figure 83). Teachers should choose an intervention where the evidence relating to these factors makes the intervention a good fit for their setting and for the specific pupils who require a targeted intervention. That the factors identified also map on to the bioecological model of human development (Bronfenbrenner & Morris, 2006) strengthens our confidence in both.

Figure 83 Strength of evidence summary: What factors, in general, make using targeted interventions for pupils with SEND more effective?

Dimension	Details
Place on 'development of theory' to 'evidence-based practice' line	Strong evidence in line with theory
Number of SRs showing positive results	29
Consistency of these results	Strength is based on quantity & consistency of review results.
Total number of included studies	980
Total number of relevant participants	22,956
Quality assurance of included studies	19 reviews used established quality assurance tools, 4 relied on publication in a peer-reviewed journal; 8 did not mention any quality assurance process.
Judgement	Strong

9.2.4 Relevance of available evidence to England's mainstream schools

Although many review authors were academics based in the USA, the reviews were not limited to studies that took place in that context. The interventions reviewed were suitable for use as targeted interventions in mainstream schools. They included both subject-specific (e.g. mathematics) and non-subject specific ones (e.g. reading

skills, social skills). Of the 31 systematic reviews, 25 were specific to types of special educational needs (e.g. 8 related to pupils with 'learning disabilities', 6 to pupils with behavioural difficulties, 5 to pupils on the autism spectrum and so on). Six of the reviews were non-specific about the type of special educational need. The cumulative evidence of moderators of effectiveness is therefore relevant to a broad range of special needs and important subject and skill development areas. In addition, large numbers of participants were included in both primary schools and secondary schools (Figure 84). Some contextual moderators were specific to the USA SEN system (e.g. investigating whether effectiveness was moderated by delivery in a special education versus general education class), but this is similar enough to the English equivalent of a mainstream class context versus a resourced-base context to remain relevant.

Figure 84 Relevance to England's mainstream schools summary: What factors, in general, make using targeted interventions for pupils with SEND more effective?

Dimension	Details
Relevance of participants in the studies	Yes – included >4380 participants relevant to primary schools and >1510 participants relevant to secondary schools
Relevance of the research questions of the SRs to mainstream schools	Yes – all focused on effectiveness of targeted interventions in settings relevant to mainstream schools
Relevance within England's legislative and Code of Practice context	Yes
Relevance to the educational and external services delivery context in England	Yes
Judgement	Highly relevant

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10 Evidence on effective use of TAs and support staff re pupils with SEND

10.1 Introduction

In this chapter, we use three systematic reviews to address one review question:

> How should schools effectively deploy teaching assistants (TAs) and support staff to support pupils with SEND to make progress?

The EEF has already published guidance on making the best use of TAs (Sharples, Webster & Blatchford, no date). This evidence question sought to add evidence to that guidance by focusing only on the use of TAs working with pupils with SEND.

The *SEND Code of Practice* (DfE, 2015, p99, 6.36) is clear that teachers, not TAs, are 'responsible and accountable' for pupil progress. Therefore, the question addressed in this chapter is important for all England's mainstream schools.

10.2 How should schools effectively deploy teaching assistants (TAs) and support staff to support pupils with SEND to make progress?

10.2.1 Overview of findings

Based on three systematic reviews (Sutton et al., 2019; Sharma & Salend, 2016; Farrell et al., 2010), it is clear that schools should deploy TAs with care, when used to support the progress of pupils with SEND. To support effectiveness, the teacher (or SENDCO or similar, depending on context) must retain responsibility for selecting an evidence-based, relevant, targeted intervention; for training the TA to use it with fidelity; provide supervision; observe the TA working and provide feedback; and ensure that pupils with SEND are included in the teacher's own whole class, small group and one-to-one pedagogical practice. Using TAs who are untrained and/or unsupervised; allowing TAs to deliver ineffective teaching; TAs being constantly with certain pupils should be avoided. These findings corroborate the EEFs guidance on *Making Best Use of Teaching Assistants* (Sharples, Webster & Blatchford, no date).

Strength of evidence: high

Relevance to England's mainstream schools: high

10.2.2 Further details of findings

We identified three systematic reviews relevant to the question of how schools should deploy TAs and support staff effectively to support the progress of pupils with SEND. Two related to a broad range of pupils with learning difficulties and to academic outcomes (Sharma & Salend, 2016; Farrell et al., 2010): the other to pupils with autism specifically and to social communication outcomes (Sutton et al., 2019). Both concluded that properly trained TAs could be used effectively to deliver targeted interventions that supported these pupils' progress.

Sharma & Salend (2016) summarise the findings of eight earlier literature reviews/articles about TAs as showing that TAs:

> "(a) perform a variety of roles that were generally viewed positively by teachers, TAs, students and parents;
>
> (b) often assume primary instructional roles which may hinder the performance of students and should be the responsibility of trained teachers;
>
> (c) can foster improved academic, behavioral and social outcomes for students when they are appropriately trained and supervised;
>
> (d) rarely receive adequate training and supervision." (Sharma & Salend, 2016, p118)

Their own review included 61 studies from 11 countries and, essentially, found the same results. That is, there is a mixed picture of positive and negative results depending on the research methods used, the research questions asked, the perspective gained, and the contextual detail of how TAs were deployed. For our present review, the important findings is that:

> "TAs who are well trained and supervised to deliver effective instruction can foster student learning and pro-social behaviour", (Sharma and Salend, 2016, p125).

This contrasts with another finding that:

> "the ineffective and separate instruction delivered by untrained and unsupervised TAs as well as their constant physical presence inadvertently undermine the inclusion, learning, socialization and independence of students with disabilities, and the pedagogical roles of their teachers." (Sharma & Salend, 2016, p125).

These practices (using TAs who are untrained and/or unsupervised; allowing TAs to deliver ineffective teaching; TAs being constantly with certain pupils) should be avoided. (This finding is corroborated also by Roberts & Simpson (2016, p1091), a systematic review we use in Chapter 12 on schools working effectively with parents of pupils with SEND.)

The two other included reviews illustrate the positive end of the Sharma & Salend (2016) findings.

The Farrell et al. (2010) article reports on a sub-set of articles included in the underlying systematic review (Alborz, Pearson, Farrell & Howes, 2009). They focus on 13 articles about the, "impact of TAs on pupils' academic achievement" (p438). They break these down into two groups: nine studies reporting on pupil outcomes after targeted interventions were delivered by TAs to address an identified learning difficulty; and four studies that examined the impact on whole class pupil outcomes of having a TA in the classroom. For the purposes of the present review, only the

nine studies about interventions targeted at pupils with a learning difficulty are relevant.

The finding from eight of these nine studies is:

> "that trained and supported TAs, either working on a one to one basis or in a small group, helped primary-aged children with literacy and language problems to make statistically significant gains in learning when compared to similar children who did not receive TA support." (Farrell et al., 2010, p439)

One of these eight studies included a longitudinal follow-up, reporting that:

> "these differential gains were sustained after a 16 month period. [The study's authors] conclude that "CA (TA) delivered reading interventions clearly can contribute to raising literacy standards and have long-term effects" (Savage and Carless 2008, 379)." (Farrell et al., 2010, p439).

Farrell et al. (2010) examined why one of the nine studies (Muijs and Reynolds, 2003) did not report positive results. They noted that in that study the average time the TAs spent supporting the pupils was "less than an hour a week" (p439) compared to a mean time of 1.5 hours per week in the other studies. Also of importance was that, in that study, unlike in the other studies, the pupils supported by the TA were not withdrawn from the class.

The Sutton et al. (2019) study reviewed experimental design research studies that tested the effectiveness of interventions delivered in elementary schools (i.e. equivalent to English primary schools). Seven of the 22 studies in their review were of interventions delivered (n = 4) or co-delivered (n = 3) by TAs. All the interventions focused on teaching social communication skills to pupils identified with autism. The outcome measures were increased frequency or duration of social communication initiation and/or response. The TAs had, "primary responsibility for direct instruction, the formation of social lunch clubs, and support for peer-mediated interventions through the delivery of prompts, feedback, and rewards" (p282). The key finding was that, "teaching assistants were effective in increasing verbal initiating and responding behaviors," (p282).

On the other hand, Sutton et al. (2019, p282) were concerned that frequently the teacher was not present during the interventions despite evidence (from Sharma and Salen's review and elsewhere) that TAs must not be used as the only person responsible for delivering targeted interventions.

Figure 85 Necessary conditions for effective deployment of TAs to support progress of pupils with SEND

- Professional (teacher; SENDCO, external professional) selection of an intervention that has an evidence-base of effectiveness to address the targeted area of learning
- Teacher retains responsibility for the pupil's progress and for including the pupil in their own (i.e. the teacher's) whole class teaching, small group and one-to-one pedagogical practices

- Training of TA to deliver the specific intervention with fidelity
- Supervision by the teacher of TA delivering targeted intervention
- Monitoring of effectiveness of TA delivery using a valid and reliable measure
- Teacher and TA:
    - communicating well e.g. sharing information about pupils, lessons and teaching practices
    - being clear about their respective roles
    - planning the work together
    - having access to professional development e.g. on effective teaching strategies
- TA being observed and receiving feedback from teacher (or SENDCO or external professional or similar)
- Teachers ensuring that TA support is discrete rather than intrusive

Source: Created from across the 3 systematic reviews included in this section

10.2.3 Evidence base for findings

The three reviews summarised above provide strong evidence that, when trained and supported properly, TAs can be used effectively to provide targeted interventions that improve the academic, behavioural and social communication outcomes of pupils identified with particular needs.

Of the three, the best quality of review and of the studies included in the review was that by Farrell et al. (2010). All 9 of the targeted intervention studies in the Farrell et al. review, i.e. those which are of interest to the present review, were designed to compare the intervention group to a comparison or control group (p438). The pupils all had identified problems in learning but these varied by study across literacy, literacy and numeracy, numeracy, or more general language delay (p438). The pupils were mainly in Key Stage 1 (Years 1 and 2). The total number of participants was not reported. In each study, group sizes, "varied from 15 […] to approximately 180 […] with the majority ranging from 17-33 in each group" (p438). One of the nine studies included a longitudinal follow-up (p439). All the included studies were screened for quality using the EPPI-Centre's own approach, the 'weight of evidence' tool (see Gough, 2007). All nine were judged to be of overall 'high' quality (Alborz et al., 2009, pp13-14, Table 4.1).

In the Sutton et al. (2019) review, the seven studies that included TAs were single case designs, involving a total of 21 primary-school-aged pupils with autism. All seven studies reported positive results in the outcome measured (either frequency or duration of social communication initiation and/or response). A weakness noted by the authors is that only one of these seven studies reported "statistical significance and effect size" (p282). All included studies were screened for quality (p276) using the McMaster Critical Review Form for Quantitative Studies (Law et al., 1998). They scored from 3-5 out of a possible 7. All were deemed to have a relevant design, no potential bias, and valid and reliable outcome measures (p278, Table 1).

The large, international review by Sharma & Salend (2016) drew on 61 studies from 11 countries, of which 21 were used to answer a research question about the impact of TAs work on pupils, teachers and inclusive education, and 30 studies to answer one on what factors influenced the performance of TAs. (The remaining studies were used to answer a question about what TAs did, which is not relevant to the focus of our present review.) The primary empirical studies included a very wide range of study designs. All were published in peer-reviewed journals but otherwise no quality assurance screening was done.

Figure 86 is a summary of our judgement of the strength of evidence.

Figure 86 Strength of evidence summary: Effective use of TAs to support progress of pupils with SEND

Dimension	**Details**
Place on development of theory to evidence-based practice line	Effectiveness research in typical settings.
Number of SRs showing positive results	3
Precision of these results	Not reported in sufficient detail
Quality of the SRs as SRs (CASP)	Good enough – some weaknesses
Total number of included studies	67[28]
Total number of relevant participants	Not reported in detail – over 1000
Study designs of included studies	Group comparison/control; single-case; quantitative; qualitative; mixed methods
Quality assurance of included studies	Yes – in 2 of 3 reviews
Judgement	High

Figure 87 provides a structured summary of the three included systematic reviews.

[28] This includes 51 of 61 studies in the Sharma & Salend (2016) systematic review. This may be an overestimation if the 21 studies used to answer their RQ (b) overlapped with the 30 studies used to answer their RQ(c).

Figure 87 Systematic reviews relevant to RQ: How should schools effectively deploy teaching assistants (TAs) and support staff to support pupils with SEND to make progress?

First Author	Date	Research questions for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
		Basic article info			**CASP- SR Quality of article**					
Sharma	2016	"(a) What roles are TAs assuming to support educators and students in inclusive classrooms?; (b) How do the roles performed and supports provided by TAs in inclusive classrooms impact students, educators and inclusive education?; and (c) What factors influence the performance of TAs in inclusive classrooms?", (p119)	2005-2015	"primary empirical research on TAs" [wide range of study designs], pp119-120	No QA tool used. Had to be peer-reviewed, p119.	Only "TAs who are well trained and supervised to deliver effective instruction can foster student learning and pro-social behaviour", (p125).	RQ(b) 21; RQ(c) 30.	NR	NR (41 studies, p121)	NR (30 studies, p121)

First Author	Date	Research questions for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
		Basic article info			CASP- SR Quality of article					
Farrell	2010	" the impact of teaching assistants (TAs) (or their equivalent) on improving pupils' academic achievement that had been measured in some way before and after a period of intervention/ support from a TA." (p.435)	"at any time", p437; [1974-2008, full report, Alborz et al., 2009, pp23-26]	9 quasi-experimental studies (p438); 4 design not reported; "[all included studies] provided empirical data" [full report, Alborz et al., 2009, p8]	Yes / the 'weight of evidence' tool (EPPI-Centre, 2001)	" suggest that TAs can have an impact in raising the academic achievement of specific groups of pupils with learning difficulties provided they are trained and supported in this process." (p.447).	13 (9 targeted - 4 non-targeted)	NR	NR - but all 13 studies were in primary schools, (Table 1, pp440-442)	0

First Author	Date	Research questions for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
		Basic article info			CASP- SR Quality of article					
Sutton	2019	"to provide educators and other professionals with an understanding of the resources which have been utilized in schools to deliver interventions targeted at teaching students with autism to initiate and/or respond to their peers." (p275)	1994-2016 , (p.275)	an experimental [single-case] design to test the effectiveness of an intervention , (p.275; p277)	Yes / Used McMaster Critical Review Form for Quantitative Studies (p.276).	"[Results] suggest that interventions set in schools can effectively increase the frequency and duration in which students with autism initiate and respond to communication with peers, with 18 of the 22 studies reporting positive intervention effects." (p.282)	22	78 (p.277)	"72 males and 6 female students with autism aged 3–12 years" (p.277).	0

10.2.4 Relevance of available evidence to England's mainstream schools

The findings from all three systematic reviews are highly relevant to English mainstream **primary** schools. The findings from the Sharma and Salend (2016) review are also relevant to **secondary** schools.

Figure 88 Relevance to England's mainstream schools summary: sub-section title here

Dimension	Details
Relevance of participants in the studies	Yes (TAs and pupils with specific types of SEND)
Relevance of the research questions of the SRs to mainstream schools	Yes
Relevance within England's legislative and Code of Practice context	Yes
Relevance to the educational and external services delivery context in England	Yes
Judgement	Highly relevant

References

Systematic reviews

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Sharma, U. and Salend, S.J. (2016). Teaching assistants in inclusive classrooms: a systematic analysis of the international research. *Australian Journal of Teacher Education, 41*, 118–134.

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11 Evidence on effective work with external support

11.1 Introduction

This chapter draws on evidence from three systematic reviews to address one review question:

- How should schools work with external support to be effective in supporting pupils with SEND to make progress?

In addressing this research question, it is important to be mindful of the broader context whereby, "local authorities and their partner commissioning bodies" have statutory duties anyway to develop, "joint arrangements for commissioning services to improve outcomes for 0 – 25-year old children and young people who have special educational needs (SEN) or disabilities" (DfE, 2015, p37). The duties of education, health and social care commissioning bodies to work together to support positive outcomes for pupils with SEND create the context within which schools then develop effective ways of working with external support.

The *SEND Code of Practice 0-25 years* (DfE, 2015) also sets out some clear expectations of how schools should involve 'specialists', such as educational psychologists, specialist teachers or support services (e.g. for pupils with hearing or visual impairment), therapists and the Child and Adolescent Mental Health Services. (DfE, 2015, 6.58-6.62, pp102-103). These are summarised in Figure 89.

Figure 89 Summary of guidance for schools on involving specialists in SEND Code of Practice 0-25 years *(DfE, 2015)*

(a) Seeking advice from external specialists	
When?	• At any point, after having discussed this with parents • Always, after having discussed this with parents, if the pupil, "continues to make little or no progress or where they continue to work at levels substantially below those expected of pupils of a similar age despite evidence-based SEN support delivered by appropriately trained staff." (p102)
Why?	• To advise on early identification of SEN • To advise on effective support and interventions
What then?	• Record what was discussed and agreed • Share this with parents and teaching staff supporting the child
(b) Receiving support from external specialists	
When?	• As soon as possible after need for support is identified
What?	• A range of evidence-based and effective teaching approaches • Appropriate equipment

	• Appropriate strategies and interventions
Why?	• To support progress towards agreed outcome/s
What then?	• Agree a date for review of progress • Review progress by agreed date

Source: Summarised from DfE, 2015, 6.58-6.62, pp102-103.

11.2 How should schools work with external support to be effective in supporting pupils with SEND to make progress?

11.2.1 Overview of findings

We found systematic reviews that synthesised descriptions of a range of different models for how schools and external professionals work together, or might work together. We also found some evidence of the effectiveness of collaborative and team-working approaches in supporting pupils' progress (towards varying outcomes); and of the benefits of ensuring work with external professionals was coordinated efficiently. We found evidence and models of effective practice based on speech and language therapists and education staff working together. We argue that these could be adapted to inform effective work with external support likely to be effective at each of the three tiers of the multi-level graduated support approach to intervention.

Strength of evidence: medium

Relevance to England's mainstream schools: high

11.2.2 Further details of findings

We found three systematic reviews that synthesised research of direct relevance to our research question (Annaby et al., 2019; Gallagher et al., 2109; Hillier et al., 2010). In addition, we draw on an important discussion paper (Ebbels et al., 2019) and the relevant section ('collaboration') of the Council for Exceptional Children/CEEDAR Center (Mcleskey et al., 2017) *High Leverage Practices* report. Although not systematic reviews, these two documents are soundly based on the research evidence, relating respectively to speech and language therapists working with schools (Ebbels et al., 2019) and collaboration with specialists more generally (McLeskey et al., 2017). The latter report is also informed by expert opinion.

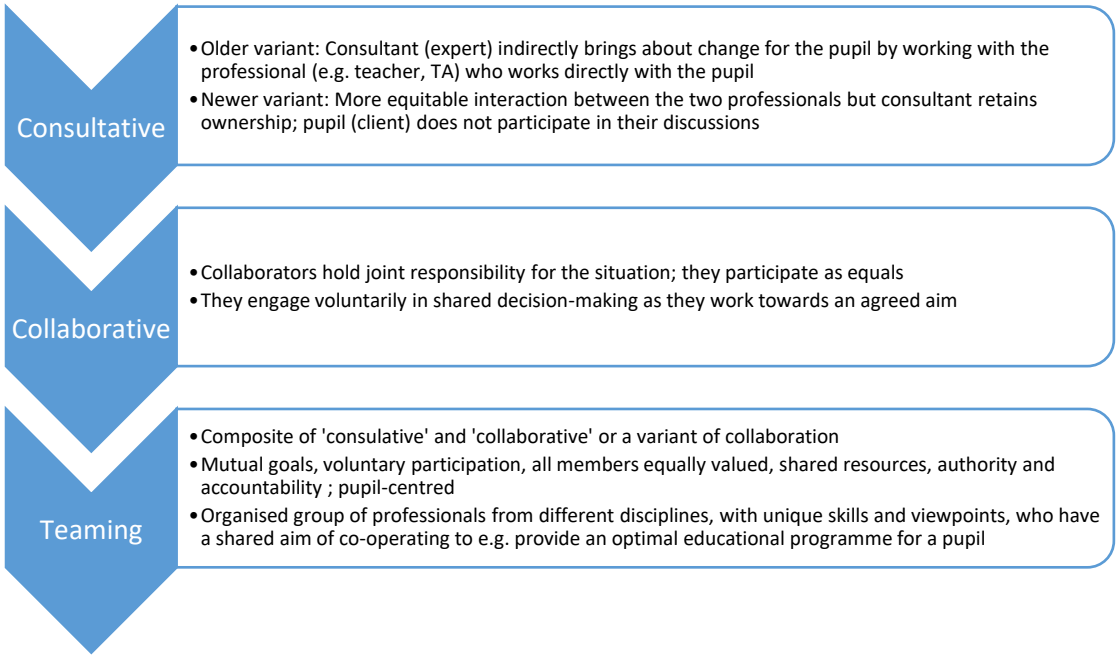
Models of working with external support

The purpose of two of the systematic reviews (Anaby et al., 2019; Hillier et al., 2010) was to examine models of delivery of specialist support in school settings. Hillier et al. (2010) focused on collaborative models for health and education professionals working together, whilst Anaby et al. (2019) took a broader view across 'interdisciplinary services' working in schools.

Hillier et al. (2010) created a synthesis of descriptions of different models of working. These are summarised in Figure 90 to Figure 92. We think these are helpful aids to reflection about forms of engagement with external support agencies and staff.

Figure 90 illustrates a trend over time, shifting from an expert-led consultative model to a more equal team of people from different disciplines working together with the common goal of meeting the needs of the pupil/s. Although derived specifically from health-education interactions, this model may also be useful in thinking about forms of engaging with a wider range of external support agencies/staff.

Figure 90 Models of health-education interaction, as synthesised by Hillier et al. (2010)



Source: Summarised from Hillier et al., 2010, p6-7.

Figure 91 then sets out a continuum of models of team working, from multi-disciplinary to trans-disciplinary, where the key difference is the role of the individual professional in the team.

Figure 91 Models of teamwork, as synthesised by Hillier et al. (2010)

Continuum of models of teamwork			
	Multi-disciplinary team	Interdisciplinary team	Transdisciplinary team
Role of the individual professional in team	• Works in relative isolation, based in discipline • Contributes to multidisciplinary meetings and planning	• Purposeful and negotiated role overlap will blur discipline boundaries • May work together with or alongside others in the team	• Discipline-based role boundaries may dissolve to enable desired outcomes for the child (e.g. a teacher may deliver a speech therapy programme)
Role of the child and parents	• Members of the team	• Members of the team	• Members of the team

Source: Summarised from Hillier et al., 2010, p4.

Within any form of teamwork (Figure 91), a case management model may operate (called 'service coordination' in Anaby et al., 2010). Hillier et al. (2010) delineated the key features of different versions of a case management model (Figure 92).

Figure 92 Variants of a case management model, as synthesised by Hillier et al. (2010)

Variants of a case management model	
Responsibility for the 'case' (i.e. the child)	• Specially trained case manager, or • Nominated person from the team (which could be of any team work model), or • Nominated agency represented in the team
Context in which support takes place	• Neutral site, or • Child's home, or • Child's school, or • Site of one of the agencies represented in the team

Source: Summarised from Hillier et al., 2010, p6.

Evidence of effectiveness of these models

Hillier et al. (2010) reported that all the models derived from their systematic review of education-health working together were, 'reported descriptively and no formal evaluation results were included in any of the reports' (p7). In other words, their review found that the effectiveness of these different ways of health and education professionals working together had not been formally empirically evaluated. However, more recent systematic reviews have begun to identify an evidence-base for some of the models of working.

A later systematic review (Anaby et al., 2019) cited evidence from five studies of positive effects on pupil outcomes (of varying types) or on identification of pupils needs as a result of **collaboration** and **teamwork** (p19). In their discussion paper, Ebbels et al. (2019) reported that **collaborative work** between education staff and speech and language therapists (SLTs) was effective in particular situations:

> "Collaborative work between education staff and SLTs may focus on individual children or on whole classes, and systematic reviews have concluded that collaborative work between SLTs and teachers is beneficial in classes with high numbers of 'at risk' children and also for children with identified language disorders (i.e. across Tiers 1-3[29]) (Archibald 2017[30]; Cirrin et al., 2010[31])." (Ebbels, et al., 2019, p10.)

They noted that collaborative work by SLTs with education staff is not always practiced but that it could happen at universal, targeted and individual intervention levels.

Anaby et al. (2010, p19) also cited findings from eight studies that evaluated the effect of coordination of external support (e.g. organising meetings between professionals, facilitating joint planning) but provided no details on the outcomes. The implication was that the evaluations of this type of **coordinated case management** were positive.

The Council for Exceptional Children and CEEDAR Center's research syntheses report (McLeskey et al., 2017) also highlights **collaboration** with professionals as a high-leverage practice to increase the success of pupils with SEND (Figure 93). They concluded that there was, 'some evidence […] to demonstrate the effectiveness of collaboration' but 'only limited rigorous empirical evidence' (p30). These authors emphasised the need for mutual trust, mutual respect and good communication skills (e.g. active listening) when working collaboratively.

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[29] See Figure 95

[30] Archibald, L. M., 2017, SLP–educator classroom collaboration: a review to inform reason-based practice. *Autism and Developmental Language Impairments*, **2**, 1–17. 2396941516680369.

[31] Cirrin, F. M., Schooling, T. L., Nelson, N. W., Diehl, S. F., Flynn, P. F., Staskowski, M.,Torrey, T. and Adamczyk, D. F., 2010, Evidence-based systematic review: effects of different service delivery models on communication outcomes for elementary school-age children. *Language Speech and Hearing Services in Schools*, **41**, 233–264.

Figure 93 Collaboration as a high-leverage practice (McLeskey et al., 2017, p28)

HLP1	**Collaborate with professionals to increase student success.**
'Collaboration with general education teachers, paraprofessionals, and support staff is necessary to support students' learning toward measurable outcomes and to facilitate students' social and emotional well-being across all school environments and instructional settings (e.g., co-taught). Collaboration with individuals or teams requires the use of effective collaboration behaviors (e.g., sharing ideas, active listening, questioning, planning, problem solving, negotiating) to develop and adjust instructional or behavioral plans based on student data, and the coordination of expectations, responsibilities, and resources to maximize student learning.' (p28)	

Source: McLeskey et al., 2017, p28.

Collaboration and team working require all those involved to be working towards 'agreed aims' and 'mutual goals' (Figure 90). Gallagher et al. (2019) conducted a systematic review to find out how far, 'a shared understanding exists between SLT and education about DLD [developmental language disorders] and/or how these children's needs can be met'. Their findings, based on evidence from primary school phase only, indicate that 'working towards agreed aims and mutual goals' may require acknowledgement that, initially at least, different professionals may have very different understandings of the aims and goals, and that, therefore, agreeing aims and mutual goals is unlikely to be straightforward.

Gallagher et al. (2019) found that SLTs and education staff had different perspectives, as well as some shared understanding, across five key aspects of thinking about DLD and how such needs could be met. These covered the nature of DLD, assessing DLD, desired outcome/s, achieving outcomes, and the nature of intervention; in all five, there were both important differences, as well as some shared understandings. To collaborate effectively, they argued, would require education staff and SLTs to work together to reduce the areas of difference between them (Figure 94). (This requirement underlines the need for mutual trust, respect and good communication skills noted by McLeskey et al., 2017).

Figure 94 Overcoming differences in perspectives between SLTs and education staff (Gallagher et al., 2019)

Different starting points ('dominant focus' in the literature)	Implications for working together effectively
SLTs: 'seeking to understand [individual] difference' **Education**: 'adapting the environment to benefit all children'	'Navigating dilemmas of difference' Group children according to needs common to all, those specific to sub-groups of pupils; those unique to individuals[32]
SLTs: 'to show a measurable reduction of the language deficit and/or that the child has improved in language skills' **Education**: 'to be able to use [a new] skill in curriculum-based tasks'	'Negotiating shared outcomes' 'Generate a shared set of values together, in relation to the child with DLD.'
SLTs: best evidence base is knowledge *for* practice **Education**: best evidence base is knowledge that takes account of the contextual factors in a school environment	Co-creating 'knowledge to guide practice' 'Generate knowledge together that 'fits' with teaching and learning in the classroom, that is, knowledge *in* practice'

Source: Gallagher et al., 2019, pp16-18.

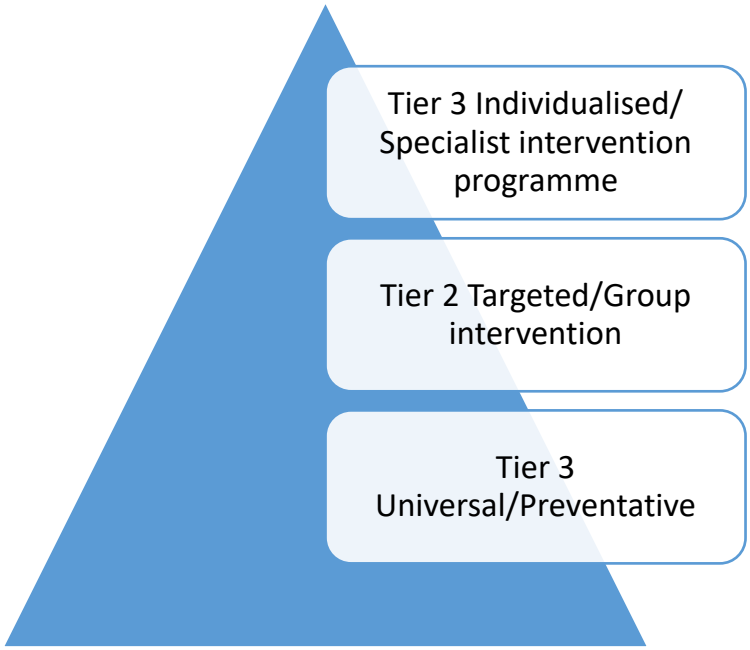
The tiered or multilevel model

In Figure 94, the suggested approach to solving the 'dilemmas of difference' was to group pupils according to needs common to all, those specific to a sub-group and those unique to individuals. Anaby et al. (2019) reported on this model ('guiding principle', p19) of delivering support services, known by various names such as the **'multilevel model', 'tiered model', 'prevention to intervention', 'response to intervention model' or 'graduated approach'** (p19) (Figure 95). These authors identified seven studies evaluating this approach to delivery of support. Again, no details were provided but the implication was that the evaluations were positive. They reported in a similar manner a further 14 studies focused on the

[32] Gallagher et al. (2019) cite as their source for this Norwich, B. (2009) Dilemmas of difference and the identification of special educational needs/disability: international perspectives, *British Educational Research Journal*, 35 (3) 447-467.

universal/preventative tier: the implication was that these evaluations had been positive.

Figure 95 The multi-level or tiered model of delivering support



In their discussion paper, Ebbels et al. (2019) explored the effectiveness of this tiered approach (Figure 95) specifically in relation to delivering speech and language therapy interventions to school pupils. They included a direct focus on the evidence of effectiveness of how speech and language therapists worked with school staff at each level to support pupil outcomes. They found little evaluation of the SLT role at Tier 1. At Tier 2, they found evidence of a need for improved training and support of those delegated to deliver small group interventions under SLT supervision. At Tier 3, they reported "good evidence" of effectiveness when SLTs were directly delivering interventions to those with developmental language disorders, and some evidence of effectiveness of the role with those with more severe and pervasive needs. Finally, they found that indirect interventions at Tier 3 (i.e. planned by an SLT but delivered by a TA or SLT assistant) were only effective if the delivery staff were, "well-trained and supported […] under the direct management of a research team, SLT or specialist teacher" (p10). Further details are provided in Figure 96.

Figure 96 Effectiveness of the tiered approach to working with speech and language therapists (Ebbels et al, 2019)

<u>Tier 1 Universal:</u>

- "There has been little evaluation of the effectiveness of SLT-specific roles in universal health and education services for children. These Tier 1 roles usually focus on training others to promote the development of speech, language and communication." (p8)
- "effective training is accompanied by individual observation sessions with coaching and/or feedback" (p10)

Tier 2 Small group targeted interventions:

- Based on two random controlled trials, "when SLTs provided the training, indications are that training and support for such programmes needs to be at higher intensity than was provided in these studies, and the quality of training and coaching provided by SLTs needs to be evaluated." (p9)
- "Studies of effective Tier 2 interventions involved relatively intensive initial training (4 days in [two studies]) followed by ongoing training (at least fortnightly), support and monitoring for staff delivering programmes. Larger studies with less training showed smaller effects ([two studies])." (p11)

Tier 3 Individualised intervention:

Tier 3a: Indirect intervention ("planned by a SLT but delivered by others", p9):

- "Studies which have demonstrated benefit for children in educational settings (both with pre-schoolers and school-aged children) have involved well-trained and -supported staff under the direct management of a research team, SLT or specialist teacher." (p10)
- "Studies at Tier 3A demonstrating good outcomes for children […] involved professionals who were employed and supervised directly by the SLT service or research team ([two studies])." (p11)
- In the only study where the level of support provided to staff carrying out Tier 3A intervention resembles that provided by current routine SLT services provided in the UK, the intervention was not delivered as planned and the children showed little progress ([one study]). This highlights the need for regular monitoring and support in order to ensure that indirect intervention takes place as intended." (p11)

Tier 3b: Direct intervention by a SLT:

- Based on three systematic reviews: "For children with DLD [developmental language disorder] (many of whom would previously have been diagnosed as having specific language impairment, SLI), good evidence exists of positive effects of individualized one-to-one direct intervention with an SLT for improving expressive language skills and vocabulary […]" (p9)
- Some evidence reported of effectiveness of direct intervention for children with severe and pervasive difficulties (when "tailored measures of progress" rather than standardised measures are used, especially if delivered in combination with collaborative work with education staff (p9)

(Ebbels et al., 2019, pp8-10).

It is important to note that Ebbels et al. (2019) also highlight the likely *ineffectiveness* of one particular method of SLTs working with school staff (offering limited training):

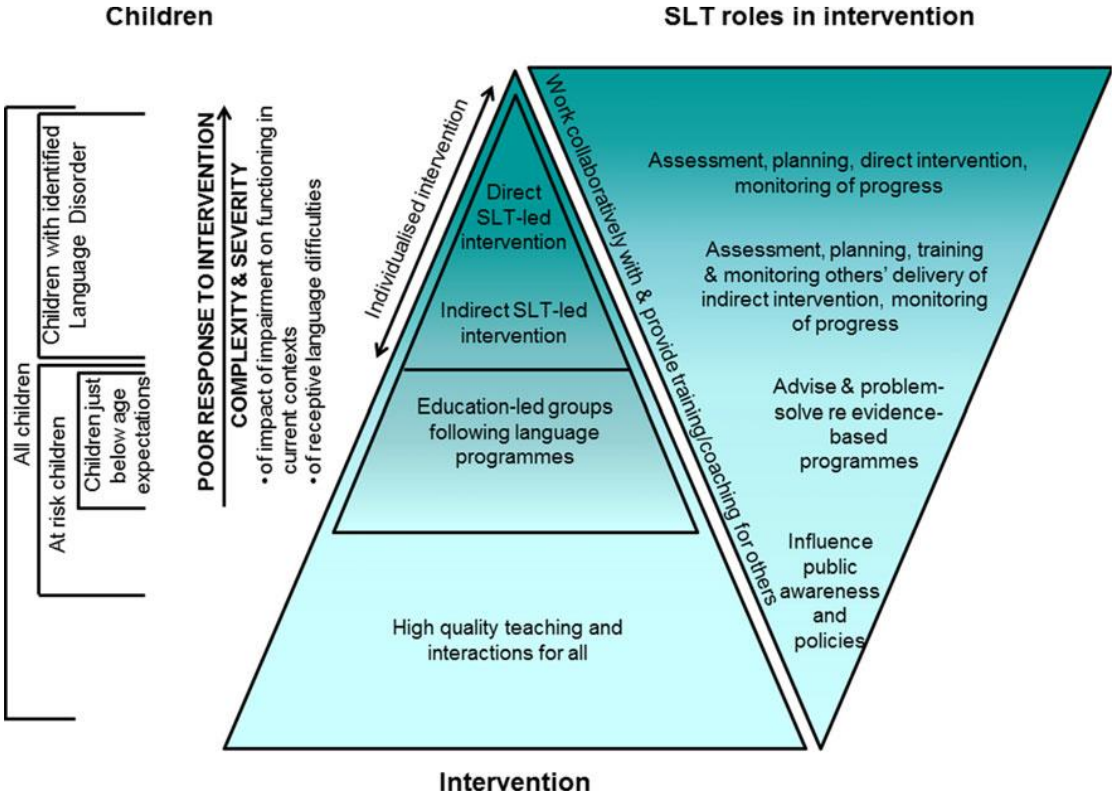
> "The evidence cited suggests that limited training offered as a cost saving substitution for other forms of intervention is unlikely to be effective. Services providing such training need to examine the outcomes for children,

in order to establish whether their input has been effective." (Ebbels et al., 2019, p11.)

A proposed evidence-based model for SLTs working with schools to support pupil progress

Based on all the evidence they reviewed in their discussion paper, Ebbels et al. (2019) proposed an elaborated version of the tiered model, in which specialist involvement (in this case, SLT) increases in line with level of need of the pupil/s (see Figure 97).

Figure 97 Suggested SLT roles in response to intervention model of intervention for children with language disorders.(Ebbels, et al., 2019, p11)

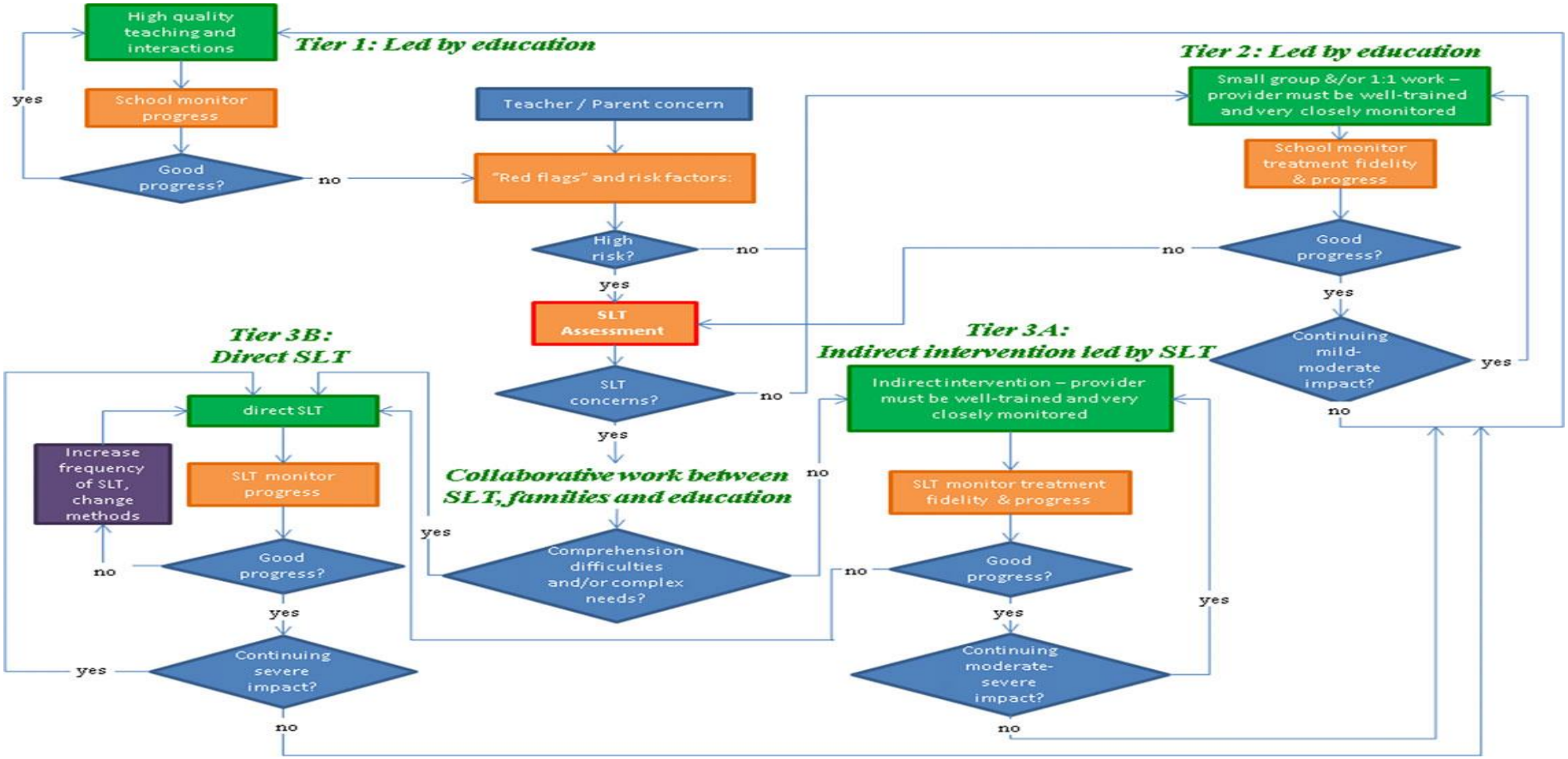


Source: Copied from Ebbels et al. ,2019, p11.

Although this model (Figure 97) is specifically evidence-based for the roles that SLTs could play at each of the tiers of intervention, it can also be thought of as a helpful model for thinking about effective use of external support more widely.

Ebbels et al. (2019) also proposed a flowchart of how best SLTs and school staff could work together to support pupil progress, based on the complexity and severity of the pupil's needs and the pupil's response to intervention (see Figure 98).

Figure 98 Flowchart of proposed pathways to intervention (Ebbels et al., 2019, p12)



Source: Copied from Ebbels et al. ,2019, p12.

Again, although the flowchart in Figure 98 is specific to school staff and SLTs working together, it could be adapted relatively easily to provide a flowchart for school staff working with a range of other external support professionals.

Principles deemed to underpin effective working with external support

Anaby et al (2019) synthesised the evidence from 56 articles (22 of which were empirical studies) into, '10 principles of organizing and delivering [interdisciplinary support] services [for pupils with disabilities[33]] in the school setting' (p19). Each 'principle' was derived from a sub-set of the 56 articles.

The four 'macrolevel principles' (p19) and the number of articles on which these were based (pp20-22) were that such services should be:

- Collaborative (18 articles)
- Coordinated (18 articles)
- Available in any of the three tiers (universal, targeted, individualised) (15 articles)
    - Include a focus on prevention at universal level (14 articles)

The six 'microlevel principles' (p19 & pp23-24) and the number of articles on which these were based (pp20-22) were:

- Providing 'mentoring, coaching, consultation, and training' to school staff (18 articles)
- Providing 'ecological interventions', i.e. providing support within the child's everyday environment, in this case, the school setting (15 articles)
- Involvement of parents/cares as team members (14 articles and clear in Code)
- Providing group-based (i.e. Tier 2) services directly or providing training to groups of teachers and/or TAs to deliver Tier 2 interventions (17 articles)
- Using 'pull-out', where pupil/s are taken out of class to receive individual or group-based support (7 articles)
- Providing individualised (i.e. Tier 1) services directly to pupils with the most complex needs (22 articles).

11.2.3 Evidence base for findings

The various models (Figure 90 to Figure 92) of health-education interprofessional working (Hillier et al., 2010) were sourced from 34 studies. Of these, five were qualitative research studies and 28 were descriptive papers. The authors of that review deemed the studies to be of a, "low (research) quality" (p4) and so did not use any formal critical appraisal tool but simply took them at face value (i.e. descriptive). As an evidence base for a descriptive synthesis of models of working across health and education, this is sound enough.

[33] 'disabilities' covered the whole range of issues included in the meaning of SEND in England (Anaby et al., 2019, Table 3, pp20-22).

A later systematic review (Anaby et al., 2019) based on 56 articles, of which 22 were empirical evaluation studies, identified evaluation studies of collaboration and teamwork, of case management/coordination, and of the tiered model of service delivery. In each case, details were not provided but the implication was that the evaluation results had been positive in terms of pupil outcomes. No assessment of the quality of included studies was reported. As the aim was to provide a synthesis of common 'best principles' (p16) and strategies for interdisciplinary support service delivery in inclusive schools, this lack of quality assessment is perhaps less important than if the aim had been a meta-analysis of evaluation results. Nevertheless, it provides a less strong evidence-base than it might have done because it is not explicit about the nature of the evaluation evidence from which its principles of service delivery are derived.

The Gallagher et al. (2019) systematic review focused on the primary school phase. It was based on 64 empirical/theoretical and theoretical papers, plus 17 papers on policy or professional guidelines. The authors critically appraised the included empirical studies[34] and developed a quality appraisal checklist for assessing theoretical papers (p4). Included studies had to meet respective quality criterion. This article provides a sound evidence-base for the similarities and differences in perspectives that are dominant in the SLT and education literature about primary school-aged pupils with DLD.

Although not a systematic review, we also drew on the Ebbels et al. (2019) discussion paper which was based on meta-analyses, systematic reviews and, in the absence of these, on controlled, peer-reviewed group studies. Preference was given to the most recent evidence which was also the most relevant to service delivery (i.e. to how speech and language therapists worked with school staff to support language and communication outcomes for pupils). The findings of this discussion paper are, therefore, strongly evidence-based.

Figure 99 Strength of evidence summary: effective work with external agencies

Dimension	**Details**
Place on 'development of theory' to 'evidence-based practice' line	The theory has informed practice, which is widespread and supported by legislation and guidance. The evidence-base for effective work with external support services is now building.
Number of SRs showing relevant results	3
Precision of these results	Not applicable (qualitative syntheses)

[34] They used the mixed methods appraisal tool (Pace, R., Pluye, P., Bartlett, G., MacAulay, A. C., Salsberg, J., Jagosh, J. and Seller, R., 2012, Testing the reliability and efficiency of the pilot Mixed Methods Appraisal Tool (MMAT) for systematic mixed studies review. *International Journal of Nursing Studies*, **49**, 47–53.

Quality of the SRs as SRs (CASP)	Good enough to draw on the findings
Total number of included studies	154
Total number of relevant participants	Not applicable
Study designs of included studies	A range of designs, each appropriate to the RQs of the relevant review
Quality assurance of included studies	In 1 of 3 systematic reviews – but the other two were descriptive syntheses so the lack of this is less important
Judgement	Medium

Figure 100 provides a structured summary of the three systematic reviews drawn on to address our research question.

Figure 100 Systematic reviews relevant to RQ: How should schools work with external support to be effective in supporting pupils with SEND to make progress?

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Annaby	2019	What is known about the existing school-based interdisciplinary service delivery models for students with disabilities who are integrated into the mainstream education system?	1998 - 2017	"Specifically, 13 were conceptual/ theoretical/ opinions, 22 were empirical evaluative studies, four were empirical descriptive studies, three were literature reviews, five were governmental documents, six were theses, and three were other types of document" (p.18)	**No** - no stringent method used and exclusion criteria broad and not related to design (p.17)	"These findings identified a variety of service delivery models used in school settings, aimed at different populations and for students with diverse conditions. Although models varied, common principles across all models were evident" (p.24)	56 articles (of which 26 were empirical studies) (p.18)	NR (93% of articles related to schools; almost all participants were relevant) (p18)	NR (>25% of articles related to primary schools; 18% related to both primary and secondary schools) (p18)	NR (>9% of articles related to secondary schools; 18% related to both primary and secondary schools) (p18)

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Gallagher	2019	"[...] to ascertain the extent to which a shared understanding exists between SLT [speech and language therapy] and education about DLD [developmental language disorders] and/or how these children's needs can be met." (p.3)	2006 - 2016	empirical and theoretical papers, plus policy or professional guidelines	**Yes** - "the mixed methods appraisal tool (MMAT) was applied to assess the methodological quality of empirical papers [...] for theoretical papers, a quality appraisal checklist was developed [...]" (p.5)	"We found some commonality [in perspectives of SLT and education], but it was the differences in perspective which dominated. We have described the nature of these differences and explored potential implications of these for practitioners when collaborating" (p.18)	64 out of 64	NR (but all relevant)	NR (but all related to primary school, p18, Note 3.)	None (p18, Note 3)

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					CASP- SR Quality of article					
Hillier	2010	"1. What models have been reported and/or evaluated for successful interactions between educators and health professionals, within a multiple agency setting for school children with healthcare needs? 2. What are the implications for training at an undergraduate and postgraduate level to put these models into effect?" (p.3)	after 1975	"of included studies, five were of primary research (using a qualitative paradigm) and one was a systematic review of multidisciplinary teamwork. The remaining 28 were descriptive of practice only" (p.4)	"Because of the low (research) quality of papers, a formal critical appraisal tool was not applied. " (p4)	"Models of interaction and teamwork are well-described but not well-evaluated in the education-health domain. [...] there is consistent expert opinion that considerable goodwill, discussion and planning is required at both a systems and individual member level to ensure teamwork is positive for all stakeholders. [...] " (p.9)	34	NR (but all related to "school children with healthcare needs" (p3))	NR (but all related to "school children with healthcare needs" (p3))	NR (but all related to "school children with healthcare needs" (p3))

11.2.4 Relevance of available evidence to England's mainstream schools

The evidence presented in this chapter is highly relevant to mainstream schools in England. Even though the literature that informed the reviews and other papers discussed here drew from studies conducted in different countries, there is enough similarity in the models of working to make these and the evidence of the effectiveness of collaboration relevant to English mainstream schools.

Please note that the Gallagher et al. (2019) systematic review was based on 64 papers relevant to primary school education only. Otherwise the evidence included secondary schools as well as primary schools.

Figure 101 Relevance to England's mainstream schools summary: effective work with external agencies

Dimension	Details
Relevance of participants in the studies	Yes (school staff or external agency professionals)
Relevance of the research questions of the SRs to mainstream schools	Yes, all focused on relevant research questions
Relevance within England's legislative and Code of Practice context	Yes, this encourages and in certain circumstances requires school staff to work with external support services and staff
Relevance to the educational and external services delivery context in England	Yes – there is enough similarity of context
Judgement	Highly relevant

References

Systematic reviews used to answer RQ

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Gallagher, A. L., Murphy, C. A., Conway, P., & Perry, A. (2019). Consequential differences in perspectives and practices concerning children with developmental language disorders: an integrative review. *International Journal of Language & Communication Disorders, 54*(4), 529-552. doi:10.1111/1460-6984.12469

Hillier, S.L., Civetta, L., Pridham, L. (2010). A systematic review of collaborative models for health and educational professionals working in school settings and implications for training, *Education for Health, 23*(3), 2-12

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Ebbels, S. H., McCartney, E., Slonims, V., Dockrell, J. E., & Norbury, C. F. (2019). Evidence-based pathways to intervention for children with language disorders. *International Journal of Language & Communication Disorders, 54*(1), 3-19. doi:10.1111/1460-6984.12387

McLeskey, J., Barringer, M-D., Billingsley, B., Brownell, M., Jackson, D., Kennedy, M., Lewis, T., Maheady, L., Rodriguez, J., Scheeler, M.C., Winn, J., & Ziegler, D. (2017). *High-leverage practices in special education.* Arlington, VA: Council for Exceptional Children and CEEDAR Center.

12 Evidence on schools' effective engagement of parents of pupils with SEND

12.1 Introduction

In this chapter, one review question is addressed:

- How should schools effectively engage parents of children with SEND?

'Engagement' of pupils with SEND is used in much the same way as in the EEF's guidance report on working with parents (van Poortvliet, Axford, Lloyd, no date, p5) except that we were interested in two additional areas of pupil outcomes, added in square brackets to the following quote from that guidance:

> "[…] when we refer to 'parental engagement' we mean 'schools working with parents to improve children's academic [behavioural, and social, emotional and mental health] outcomes"

12.2 How should schools effectively engage parents of children with SEND?

12.2.1 Overview of findings

We found three relevant systematic reviews (Roberts and Simpson, 2016; Gwernan-Jones, Moore, Garside, Richardson, Thompson-Coon, Rogers, Cooper, Stein, Ford, 2015; Richardson, Moore, Gwernan-Jones, Thompson-Coon, Ukoumunne, Rogers, Whear, Newlove-Delgado, Logan, Morris, Taylor, Cooper, Stein, Garside, Ford, 2015). All drew on largely qualitative studies and reported thematic findings. Most findings were negative with a minority of positive findings. Focusing on those relevant to our purposes in this chapter, we drew out the implications for what schools should do to engage parents of pupils with SEND effectively. This begins by understanding that a pupil/child will interact differently with the home versus school environment. School staff should therefore be proactive in seeking to listen to and learn from parents what parents know about their child at home, as well as communicating constructively with parents about the pupil's needs in school. (Figure 102 has further details.)

Strength of evidence: low

Relevance to England's mainstream schools: high

12.2.2 Further details of findings

The three reviews (Roberts and Simpson, 2016; Gwernan-Jones et al., 2015; Richardson et al, 2015) reported largely negative findings about home-school interaction around pupils with SEND, specifically autism and attention-deficit/hyperactivity disorder (ADHD). For example:

> "There was some difference in perception of service delivery between education professionals and parents; parents believed they received little

help or information, while education professionals believed they supported parents across the school years." (Roberts & Simpson,2016, p1091)

" […] constructive relationships between parents and teachers were considered to be powerful in supporting pupils; however, they tended to be described as exceptions to the norm" (Gwernan-Jones et al., 2015, p290)

"Parent–teacher conflict over influences on and strategies to manage ADHD symptoms in pupils is the norm in included studies; collaborative relationships between parents and teachers occurred through great personal investment of time and overcoming structural barriers." (Richardson et al., 2015, p237)

We selected only the findings relevant to the research question for this chapter (the research questions of each of these reviews were broader than ours.) Based on the minority of positive findings, in addition to turning the negatives into positives, Figure 102 draws out the implications for what schools should to do engage parents of pupils with SEND effectively. Although the research was focused on autism (Roberts et al., 2016) and ADHD (Gwernan-Jones et al., 2015; Richardson et al., 2015), these implications are so generic that they are likely to be relevant to how schools interact with parents of a pupil with any type of SEND.

Figure 102 Findings on effective engagement of the parents of pupils with SEND, derived from across the three systematic reviews

What schools should do to engage parents of pupils with SEND effectively	**Source/s**
Have a clear, and clearly articulated, concept of constructive collaboration between parents and teachers. Be clear about the purpose of each communication with parents e.g. to exchange knowledge; to engage in activity; to agree actions. Be committed to constructive communication with parents. Be committed to undertake actions, as agreed with parents, and accountable for doing so.	[implied] Richardson et al. (2015),p235, 236, 238
See the pupil with SEND as a person, not as a problem. Begin from an understanding that home and school are different environments in which the pupil with SEND will interact differently: be willing to listen to, hear and learn from parents' accounts of how the pupil is at home. Initiate contact with the pupil's parents to share positive information and thus avoid only being in touch about problems. Engage in genuine two-way conversations to avoid parents feeling that they are being told what to do, or are having school making demands on them to 'solve' issues occurring in school, with no discussion and no experience of being listened to and heard.	Gwernan-Jones et al. (2015), 289-296, based on 3 of 6 studies in particular, but not exclusively; most corroborated also by Roberts et al., 2016, pp1089 – 91.

Develop knowledge and expertise around the pupil's SEND and share that with colleagues in the school: be open to learning from the parents' knowledge about the pupil's needs and strengths. Be proactive about agreeing strategies with the pupil, in consultation with the parents, to prevent pupil's loss of behavioural self-control in school.	

12.2.3 Evidence base for findings

The systematic review evidence base on this topic is at the level of thematic analysis of qualitative data. We have used that to generate Figure 102, effectively creating a theoretical framework that could inform interventions to improve how schools engage parents of pupils with SEND. These could be tested empirically but, to date, any such research has not been included in systematic reviews. Nevertheless, the fact that three separate systematic reviews arrived at congruent conclusions, suggests that this type of theory-generation is robust. The findings extend, but do not contradict, those of broader reviews of parental involvement (Goodhall, Vorhaus, Carpentieri, Brookes, Akerman, Harris, 2011) and guidance on schools engaging parents of pupils in general (van Poortvliet, Axford, Lloyd, no date). The need to develop and evaluate interventions was also found by See and Gorard (2013) in their review of parental involvement interventions to support the education of disadvantaged children.

Roberts et al. (2016) focused on parent-teacher interaction over a child/pupil with autism. Three studies sourced the specific findings about the home-school relationship (p1091). These involved 212 parents and 96 school staff. Data relevant to primary schools came only from parent perspectives: that relevant to secondary schools came from both school staff and parent perspectives. Overall findings of the review relevant to our review (as summarised in Figure 102) drew from 18 studies that involved parents and/or school staff.

The Richardson et al. (2015) publication incorporates multiple systematic reviews, one of which (review 4c) is reported in the Gwernan-Jones et al. (2015) article. We used Gwernan-Jones et al. (2015) as our source for details of that review. We used the Richardson et al. (2015) publication for its other systematic review (review 4d) relevant to this present review.

The Gwernan-Jones et al. (2015) systematic review drew on six qualitative studies involving 387 parents of children with, or at risk of, ADHD. These parent perspectives are relevant to both primary and secondary school contexts. They used a recognised quality assurance tool (Wallace et al., 2004) to, "raise reviewer awareness of methodological aspects of each study rather than as a basis for differential study weight or exclusion (Dixon-Woods et al., 20140", (p282).

Richardson et al. (2015), in their systematic review 4d, "The school experiences and perceptions of pupils diagnosed with, or at risk of, attention-deficit/hyperactivity disorder, their teachers, parents and peers", included seven qualitative studies. These involved 63 parents and more than 94 school staff (Table 56, p216), including

parents and teachers from both primary and secondary school contexts (Table 57, p218). They also used the Wallace et al., 2004, tool to understand the methodological aspects of each included study.

Figure 103 summarises our assessment of the strength of evidence.

Figure 103 Strength of evidence summary: how schools can effectively engage parents of pupils with SEND

Dimension	**Details**
Place on development of theory to evidence-based practice line	Theory development: Thematic analysis based mainly on qualitative studies
Number of SRs showing *relevant* results	3
Consistency of these results	Consistent, congruent results.
Quality of the SRs as SRs (CASP)	2 of 3 very high quality; third is good enough.
Total number of included studies	16
Total number of relevant participants	662 parents; >190 school staff
Study designs of included studies	Mainly qualitative
Quality assurance of included studies	Yes for 2 of 3 reviews; other relied on studies having been peer-reviewed.
Judgement	Low

Figure 104 provides a structured summary of the three included systematic reviews.

Figure 104 Systematic reviews relevant to RQ: How should schools effectively engage parents of children with SEND?

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					**CASP- SR Quality of article**					
Roberts	2016	"[To] examine research into the perspectives of stakeholders of the education of students with autism (teachers, parents and students), in order to understand their perception of the extent to which schools are inclusive and their perception of the effect of the current system of education provision on practice in schools and outcomes for students." (p.1085)	"January 2004 - July 2015" (p. 1085)	Semi-structured interviews (10 studies). Four studies included quantitative data analysis. (p.1086)	**No** - no quality assessment mentioned	"[...] good communication with parents [viewed as] an essential component of effective inclusion ; [...] some difference in perception of service delivery [...]; parents believed they received little help or information, while education professionals believed they supported parents across the school years [...]; [one study] reported 60% of parents were satisfied with the home–school relationship; [another] found that parents believed [...] that home–school communication could be improved" (p.1091)	19/23 (studies including teachers and parents) - other studies only student voice	"347 parents of students with autism and 749 education professionals including principals, special education teachers, general teachers, teacher assistants, school psychologists, specialists and school district officers" (p.1086)	15 out of 21	10 out of 21

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					**CASP- SR Quality of article**					
Gwernan-Jones	2015	'What are the school-related experiences and perceptions of parents of pupils diagnosed with ADHD?'	1980 - March 2013	" systematic review of qualitative research of school-related experiences of parents of pupils diagnosed withADHD" (p.296)	**Yes -**'Quality appraisal was conducted during data extraction using a checklist adapted from Wallace et al. (2004) (p.282)	"the development of high-quality parent–teacher relationships for pupils diagnosed with ADHD faces substantial barriers. Where positive relationships were established, they were powerful in their ability to resolve school difficulties for the pupil. However, positive relationships were described as the exception. " (p.294-295)	7 out of 7	385 (383 mothers; 2 fathers). p285	4/7 (others not reported)	2/7 (others not reported)

First Author	Date	Research questions, purpose or aim for the systematic review	Dates included in systematic search	Study design/s of included articles	Q4. Did the review's authors do enough to assess quality of the included studies?	Q6. What are the overall results of the review? (the 'bottom line' results)	Number of studies on which findings relevant to our review are based	Number of participants relevant to our review about whom findings are reported	Number of relevant participants about whom findings are reported relevant to PRIMARY schools (or equivalent)	Number of relevant participants about whom findings are reported relevant to SECONDARY schools (or equivalent)
Basic article info					**CASP- SR Quality of article**					
Richardson	2015	Review 4 "What are the school-related experiences and perceptions of pupils diagnosed with or at risk of ADHD, their teachers, parents and peers?" review 4 (p.10)	1980 - 2013	Qualitative	**Yes -** using criteria adapted from the Wallace Checklist,(Wallace et al., 2004)	Review 4c (synthesised studies about parents) mothers of pupils with ADHD "commonly reported experiencing conflict with school staff, feeling blamed for their child's behaviour, and dismissed when sharing information or making requests to school staff"; Review 4d (synthesised studies exploring experiences of multiple participant types), "[...] further illuminated the importance of support from the wider school and the national context" (p.xxx)	4c - 6/6 studies (in 7 papers); 4d (7/7)	Review 4c: 289 mothers; Review 4d: 63 parents and 94 -182 teachers	NR	NR

12.2.4 Relevance of available evidence to England's mainstream schools

The three included reviews are relevant to English mainstream schools. All three reviews were international in scope but all included studies from parents and teachers in the UK that had findings in tune with the overall findings reported here from these reviews. Although the three systematic reviews focused on sub-sets of pupils with SEND (autism: Roberts et al., 2016; ADHD: Gwernan-Jones et al., 2015 & Richardson et al., 2015), these are types of SEND that are likely to be represented in almost every English mainstream school. Figure 105 is a summary of our assessment of relevance.

Figure 105 Relevance to England's mainstream schools summary: how schools should effectively engage parents of pupils with SEND

Dimension	Details
Relevance of participants in the studies	Yes – sub-sets of pupils with SEND
Relevance of the research questions of the SRs to mainstream schools	Yes
Relevance within England's legislative and Code of Practice context	Yes
Relevance to the educational and external services delivery context in England	Yes
Judgement	High

References

Systematic reviews

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Goodhall, J., Vorhaus, J., Carpentieri, J. Brookes, G., Akerman, R., Harris, A. (2011). *Review of best practice in parental engagement.* Research report DFE-RR156. London: Department for Education.

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