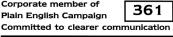# Education inspection framework

Overview of research

This paper presents the research evidence underpinning the education inspection framework. The review draws on a range of sources, including both our own research programme and a review of existing evidence bases. The review is structured to provide the evidence base that underlies each of the four key judgements for the proposed new framework: quality of education, personal development, behaviour and attitudes, and leadership and management.

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Contents

Introduction

As Her Majesty's Chief Inspector (HMCI) has stated, we are committed to ensuring that our new education inspection framework (EIF) is informed by research evidence. This aim has underpinned the whole process of our framework development and has been supported both by reviews of existing research and by conducting our own research into areas such as the curriculum.

In this paper, we have summarised this work, explaining exactly what evidence on effective practice in schools and early years providers underpins the EIF criteria. The review therefore maps onto the framework criteria, and a large proportion of the research, for example on the importance of high expectations and vision in leadership, applies across remits. However, there is also a proportion of material that relates specifically to schools or early years. Where this is the case, we will set this out in the text (the relevant remit will be stated in bold).

The review draws on a range of sources. HMCI has commissioned a programme of research from our Research and Evaluation team, much of which has fed directly into the development of the framework. Sources of evidence include our research on curriculum and teacher well-being, which are summarised in this document in relation to the criteria which they have informed.

In addition to our own research, we have reviewed research related to the four key inspection judgements: quality of education; behaviour and attitudes; personal development; and leadership and management. We have drawn on the academic research literature, but also on research and guidance from the Education Endowment Foundation, the Department for Education (DfE), and our own research and guidance reports.

One thing to note is that the research reviewed here is in large part drawn from that done in schools and early years settings, rather than in further education and skills (FES) providers. This is largely due to the relative paucity of research in FES compared with the other sectors, and it may mean that not all of the research reviewed applies equally to FES.

We have attempted to summarise the evidence comprehensively, though we have not surveyed the whole field of educational research, limiting our review to what evidence is directly related to our inspection judgements and criteria. Of course, educational research is contestable and contested, and so are research summaries such as this one. We hope, however, that publishing our evidence base will provide transparency, both on the evidence we have consulted and how we have interpreted that evidence.

This is not the end of our research work in relation to the framework. We are also looking at our methods of inspection, not least lesson observation and work scrutiny, and we will be publishing our findings on these before the end of the consultation period.

Overview of research feeding into the EIF

This overview presents a summary of the research evidence underlying the key judgement areas in the EIF. The review draws on a range of research conducted by Ofsted's research team:

- a review of the international educational effectiveness research base

- a programme of research on curriculum

- a study on teacher well-being

- a study on managing challenging behaviour.

The review is structured to provide the evidence base that underlies each of the four key judgements for the proposed new framework: quality of education, personal development, behaviour and attitudes, and leadership and management.

1. Quality of education

EIF grade criteria:

> - Leaders adopt or construct a curriculum that is ambitious and designed to give learners, particularly the most disadvantaged, the knowledge and cultural capital they need to succeed in life.[1]
>
> - The provider's curriculum is coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning and employment.
>
> - The provider has the same academic, technical or vocational ambitions for almost all learners. Where this is not practical – for example, for some learners with high levels of special educational needs and/or disabilities (SEND) – their curriculum is designed to be ambitious and to meet their needs.
>
> - Learners study the full curriculum. Providers ensure this by teaching a full range of subjects for as long as possible, 'specialising' only when necessary.

Research on the curriculum

Our working definition of curriculum is that it is a framework for setting out the aims of a programme of education, including the knowledge and skills to be gained at each stage (intent); for translating that framework over time into a structure and narrative, within an institutional context (implementation); and for evaluating what knowledge and understanding students have gained against expectations (impact). The curriculum

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[1] The term 'learners' is used for expediency throughout this document to encompass in a single word those attending education, skills and registered early years settings. It should be read as including: 'children' in early years provision, 'pupils' in all schools, 'students' in sixth forms and colleges, and 'apprentices', 'trainees' and 'adult learners' in the range of further education and skills providers. Greater distinction is made where the research is focused on a specific sector.

lies at the heart of education. It determines what learners will know and be able to go on to do by the time they have finished that stage of their education.

Curriculum matters, as it defines the knowledge and experiences that learners will receive beyond their home environment. To this extent, what is taught and how,[2] and who is included,[3] appear to be key principles of curriculum design.

Biesta argues that a lack of attention to the aims and ends of education has led to a reliance on a 'common sense' view of education.[4] A focus on academic achievement in a small number of curriculum domains or subjects is one example of the common sense approach. In **schools**, there is evidence of curriculum narrowing.

International evidence indicates that a focus on only a few measurable outcomes has had some negative consequences for curriculum design. As a result, pupils from disadvantaged backgrounds may be discouraged from taking academic subjects. A report for the Sutton Trust, for example, finds that pupil premium (PP) pupils are less likely to take English Baccalaureate (EBacc) subjects compared with non-PP pupils with similar prior attainment.[5] There are likewise indications that humanities subjects have been reduced or squeezed out of the primary curriculum.[6] Similar developments are recorded internationally. According to Berliner, curriculum narrowing has become the norm across the United States in response to the pressures of high-stakes testing.[7] The test anxiety felt by teachers and school administrators is leading to the study of the arts becoming increasingly diminished. In Australia, testing regimes are said to have led to a reduction in the time spent on other curriculum areas, and pedagogy (the method and practice of teaching) and curriculum content have been adjusted to mirror test-related content.[8]

Several studies on the unintended consequences of school inspection in Europe associate inspection systems with the narrowing and refocusing of the curriculum on test objectives and with discouraging teachers from experimenting with teaching

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[2] G Biesta, 'Good education in an age of measurement: on the need to reconnect with the question of purpose in education', in 'Educational Assessment, Evaluation and Accountability', Volume 21, Issue 1, 2009, pages 33–46.
[3] M Young, 'Overcoming the crisis in curriculum theory: a knowledge based approach', in 'Journal of Curriculum Studies', Volume 45, Issue 2, 2013, pages 101–118.
[4] G Biesta, 'Good education in an age of measurement: on the need to reconnect with the question of purpose in education', in 'Educational Assessment, Evaluation and Accountability', Volume 21, Issue 1, 2009, pages 33–46.
[5] R Allen and D Thomson, 'Changing the subject: how are the EBacc and Attainment 8 reforms changing results?', The Sutton Trust, 2016.
[6] J Barnes and S Scoffham, 'The humanities in English primary schools: struggling to survive', in 'Education', Volume 45, Issue 3, 2017, pages 3–13; 'The curriculum in successful primary schools', Ofsted, October 2002; https://dera.ioe.ac.uk//4564/.
[7] D Berliner, 'Rational responses to high stakes testing: the case of curriculum narrowing and the harm that follows', in 'Cambridge Journal of Education', Volume 41, Issue 3, 2011, pages 287–302.
[8] J Polesel, S Rice and N Dulfer, 'The impact of high-stakes testing on curriculum and pedagogy: a teacher perspective from Australia', in 'Journal of Education Policy', Volume 29, Issue 5, 2014, pages 640–657.

strategies.[9] However, weaknesses in curriculum design are not necessarily limited to countries that have high-stakes accountability systems. Stigler and Hiebert find common weaknesses across countries in their analyses of the 'Trends in international mathematics and science' (TIMSS) video studies,[10] which include lack of a shared language to discuss curriculum and poor implementation of school policies in classroom practice.

To counter these developments and further develop our understanding of curriculum, HMCI commissioned a major research programme on curriculum, that to date consists of three phases. This research has taken place in **primary, secondary and special schools**.

Phase 1

In the first phase, we conducted a study of 41 schools, reviewed inspection reports, ran focus group discussions in five regions with headteachers of good and outstanding schools, used questionnaire responses from Ofsted's parent panel and conducted desk-based retrieval from school websites. This study confirmed that there are a number of deficiencies in the system with regard to curriculum thinking. There is limited evidence of a thoughtful approach to curriculum, which is often equated with the timetable and discussed in a generic fashion. Schools reported that few teachers are trained in curriculum development or theory. There is evidence of narrowing curriculums, particularly in key stage 2, of teaching to the test, and, in secondary schools, of equating curriculum with the examination board syllabus or statutory tests.[11]

Phase 2

While a paucity of curricular thinking may now be widespread, there are schools that are highly invested in curriculum development and thinking. In the second phase of the research programme, we collected evidence from such schools.[12] We carried out a qualitative study of 23 schools, which we visited between January and March 2018. The schools were selected because their leaders were identified as being 'particularly invested in curriculum design'. They were all judged good or outstanding at their last full inspection. We tried to ensure that the sample covered a range of school types with a variety of different approaches to curriculum. In total, we visited 12 primary and 11

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[9] M Ehren, J Gustafsson, H Altrichter, G Skedsmo, D Kemethofer and S Huber, 'Comparing effects and side effects of different school inspection systems across Europe', in 'Comparative Education', Volume 51, Issue 3, 205, pages 375–400; K Jones, P Tymms, D Kemethofer, J O'Hara, G McNamara, S Huber, E Myrberg, G Skedsmo and D Greger, 'The unintended consequences of school inspection: the prevalence of inspection side-effects in Austria, the Czech Republic, England, Ireland, the Netherlands, Sweden, and Switzerland', in 'Oxford Review of Education', Volume 43, Issue 6, 2017, pages 805–822.

[10] J Stigler and J Hiebert, 'The teaching gap: best ideas from the world's teachers for improving education in the classroom', The Free Press, 1999.

[11] 'HMCI's commentary: recent primary and secondary curriculum research', Ofsted, October 2017; https://www.gov.uk/government/speeches/hmcis-commentary-october-2017.

[12] 'HMCI commentary: curriculum and the new education inspection framework', Ofsted, September 2018; https://www.gov.uk/government/speeches/hmci-commentary-curriculum-and-the-new-education-inspection-framework.

secondary schools. Visits involved a two-hour group discussion with curriculum experts at the school on their curriculum intent.

The study aimed to identify common factors associated with schools invested in curriculum development.

The findings from this phase of the study show, firstly, that there is no one-size-fits-all approach to curriculum design in these schools. Schools use different approaches, which can be categorised into three main groups:

- In **knowledge-rich** schools, the leaders see the curriculum as the mastery of a body of subject-specific knowledge defined by the school. Skills are generally considered to be an outcome of the curriculum, not its purpose. They emphasise big ideas and invaluable knowledge they want their pupils to acquire.

- In **knowledge-engaged** schools, knowledge is seen as underpinning and enabling the application of skills, although the latter are often taught alongside knowledge, and school leaders express a desire for both to be developed. Leaders and teachers in these schools do not perceive a tension between knowledge and skills, and instead see them as intertwined.

- Finally, we identified a small group of schools as having **skills-led** curriculums. In these schools, the curriculum is designed around skills, learning behaviours and 'generic knowledge'. Leaders place an emphasis on developing the skills that pupils will need for future learning, often referring to resilience, a growth mind-set and perseverance.

Most of the curriculum leaders stressed local needs and context, and were keen to ensure that, where knowledge and skills may not be acquired at home, they were developed in the school. Pupils from disadvantaged backgrounds were not provided with an impoverished curriculum, but instead given the tools, not least reading, to access a broad and rich curriculum.

Regular curriculum review is emphasised, and all leaders recognise the importance of progression. They have subject-specific progression models in place that focus on progression through the content to be learned, which appears to aid clear curriculum thinking. In these cases, the curriculum is the progression model.

In terms of sustainability, it is important to ensure that leadership of curriculum is distributed, as when the headteacher is the sole source of curriculum thinking, it can be hard to sustain, for instance if the headteacher leaves.[13]

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[13] 'HMCI commentary: curriculum and the new education inspection framework', Ofsted, September 2018; https://www.gov.uk/government/speeches/hmci-commentary-curriculum-and-the-new-education-inspection-framework.

Phase 3

The results from the phase 2 study were clearly valuable in terms of informing inspection but raised some questions about whether intentions are being followed through into implementation, as opposed to school leaders simply talking about a good idea, and about whether these are things that we could assess during inspection.

To explore this, phase 3 of our curriculum research programme tested a model of inspecting curriculum, based on our phase 2 findings, to determine whether and how we can collect valid evidence on curriculum intent and implementation, to form part of a broader quality of education judgement.[14]

Inspectors visited 64 schools (29 secondary, 33 primary and two special schools), which were selected to reflect a range in terms of inspection grades, attainment, type and demographics, and tested a series of curriculum indicators that could potentially underpin the quality of education criteria in the new inspection framework. We evaluated the effectiveness of a range of evidence collection methods, looked at what the practical limitations might be in the context of routine inspection, and evaluated whether the indicators and inspection practices allowed inspectors to distinguish between curriculum intent, implementation and impact. In each school, they looked at four subjects, ensuring that all subjects were covered in the full study.

In each visit, HMI:

- examined the school's unique curriculum offer, while being neutral on the specific style or curriculum model
- used the school's own model of curriculum to examine the extent and success of curriculum implementation in partnership with and alongside school staff
- considered the impact of leaders' 'deliberate actions' to implement their curriculum, particularly in the last 18 months
- conducted a series of activities alongside school staff to look at first-hand evidence
- examined a typical journey that pupils would undertake at the school, asking leaders to share the school's curriculum and what pupils learn from their first to their final year.

They did this using an initial meeting with senior leaders, followed by a 50-minute meeting with subject leaders, and collected primary evidence through work scrutiny, curriculum mapping, lesson observation and discussions with pupils and staff. This was followed by a final meeting with senior leaders.

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[14] 'Curriculum research: assessing intent, implementation and impact', Ofsted, December 2018; https://www.gov.uk/government/publications/curriculum-research-assessing-intent-implementation-and-impact.

Looking at this broader and more representative sample of schools confirmed some of the issues we had highlighted in phase 1 of the study. In the primary phase, some schools have an imbalanced curriculum offer, which is not as challenging as that set out in the national curriculum 2014. The structure and timetabling of the school day in some cases further limits curriculum development across subjects. The curriculum is delivered much more effectively and with wider coverage in core subjects than it is in foundation subjects.

In primary and secondary schools, teachers' subject knowledge was found to be important, and support structures are needed for newly qualified teachers (NQTs) and teachers teaching subjects they were not trained for (out of subject teaching). There were fewer opportunities for teaching staff to receive professional development in foundation subjects than in mathematics and English. As a result, some teachers lack the subject knowledge required, and this restricts the depth and coverage of curriculum on offer.

A positive finding was that leaders commonly ensure that the curriculum is appropriate to the context of the school. They are clear about how the curriculum meets the particular aims and values of their school. There is a growing understanding by leaders of the ways in which knowledge is acquired and is generative, and of how progression can be clearly planned in subjects, though this does not always filter through into subject-level implementation.

What is also clear is that leadership from the headteacher/principal and senior leadership team (SLT) is central both to curriculum development and accountability. Leaders in schools that prioritise the curriculum make it their business to ensure that the planned curriculum is implemented successfully across a wide range of subjects so that curriculum quality is high. By doing this, they ensure curriculum coherence, which was found to be a key factor in curriculum effectiveness in the TIMSS studies.[15] They hold leaders to account for checking the coverage and the depth of knowledge that pupils learn and see the curriculum as the progression that is taught. They assure themselves that leaders who have the responsibility for leading subjects have the right subject knowledge and skill set to carry out their roles well, and they recognise that high-quality professional development to develop teacher subject knowledge beyond the core subjects is essential. They insist that leaders at all levels have a solid understanding of the requirements of curriculum subjects, including the full component parts of each subject discipline. They ensure that middle leaders and teachers access specialist help and advice so that the curriculum is planned well. They do not allow teaching in foundation subjects to be reduced to time-filling exercises that do not develop pupils' conceptual understanding of subject disciplines.

EIF grade criterion:

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[15] W Schmidt, H C Wang and C C McKnight, 'Curriculum coherence: an examination of US mathematics and science content standards from an international perspective', in 'Journal of Curriculum Studies', Volume 37, Issue 5, 2005, pages 525–559.

> ■ Teachers have good knowledge of the subject(s) and courses they teach. Leaders provide effective support for those teaching outside their main areas of expertise.

Research on teacher subject knowledge and support

If curriculum lies at the heart of education, and subject lies at the heart of curriculum, then it follows that teachers need solid knowledge and understanding of the subject(s) they teach. As well as this, they need to know how to teach that subject, and, more generally, how to teach. These three types of essential knowledge are known as **content knowledge**, **pedagogical knowledge** and **pedagogical content knowledge**. Content knowledge can be defined as teachers' knowledge of the subject they are teaching, pedagogical knowledge as teachers' knowledge of effective teaching methods, and pedagogical content knowledge as teachers' knowledge of how to teach the particular subject or topic.

Research on teachers' subject knowledge has yielded mixed results, though the strongest studies tend to show the strongest relationship between subject knowledge and attainment. Some studies have used measures that are not very accurate indicators of subject knowledge. Studies in the US (which is where the majority of research in this area has been conducted) often use teacher certification (equivalent to qualified teacher status (QTS)) as a proxy. Such studies show mixed results; some show positive relationships,[16] while others show no effect.[17] However, where direct measures of teacher subject knowledge are used, the evidence is much more positive. For example, Metzler and Woessman used a Peruvian primary school dataset that contains test scores in two academic subjects for each student and each teacher.[18] This allowed the researchers to look at the impact of teacher performance in the subject on the performance of their pupils. They found that one standard deviation in subject-specific teacher achievement increases student achievement by about 10% of a standard deviation. A caveat here is that the context of Peru as a developing country is obviously every different to that in England. Baumert and others tested the content knowledge of German mathematics teachers.[19] They found a small correlation between teachers' content knowledge and pupils' progress, and a much stronger one between teachers' pedagogical content knowledge and pupils' progress.

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[16] For example, C Clotfelter, H Ladd and J Vigdor, 'Teacher credentials and student achievement in high school: a cross-subject analysis with student fixed effects', in 'The Journal of Human Resources', Volume 45, Issue 3, 2010, pages 655–681; D D Goldhaber and D J Brewer, 'Does teacher certification matter? High school teacher certification status and student achievement', in 'Educational Evaluation and Policy Analysis', Volume 22, Issue 2, 2000, pages 129–145.

[17] For example, L Darling-Hammond, 'Teacher quality and student achievement: a review of state policy evidence', in 'Education Policy Analysis Archives', Volume 8, Issue 1, 2000, pages 1–44.

[18] J Metzler and L Woesman, 'The impact of teacher subject knowledge on student achievement: evidence from within-teacher within-student variation', Forschungsinstitut zur Zukunft der Arbeit, Discussion Paper 4999, 2010.

[19] J Baumert, M Kunter, W Blum, M Brunner, T Voss, A Jordan, and Y-M Tsai, 'Teachers' mathematical knowledge, cognitive activation in the classroom, and student progress', in 'American Educational Research Journal', Volume 47, Issue 1, 2010, pages 133–180.

Another key finding is the extent to which content knowledge is associated with 'track', with teachers in academic track schools having far greater content knowledge than those in vocational tracks. The distribution of teachers' content knowledge across schools can thus have equity implications. Other studies have found a positive relationship between teachers' subject preparation, as measured by university courses taken in the subject taught, and achievement, although this mainly appears to be the case for mathematics and, to a lesser extent, science.[20] As is often the case in educational research, this may be due to the greater volume and quality of research in these subject areas. Pedagogical content knowledge is consistently related to pupils' outcomes.[21] This evidence base, therefore, points to the importance of teachers either having the requisite knowledge or receiving strong support from their schools.

Teachers' subject knowledge is not necessarily **linearly** related to pupil attainment. It is not the case that more teacher knowledge is in itself directly related to more pupil learning. The exact amount of knowledge necessary will differ by age group and level taught, and there may well be a ceiling on the correlation between knowledge and attainment. In Monk's study using data from the 'Longitudinal study of American youth', he found a positive but curvilinear relationship between teachers' subject knowledge as measured by courses taken and pupils' achievement.[22] This suggests that there may be a threshold effect operating, in that a certain level of subject knowledge is necessary for teachers to be effective, but that beyond this a law of diminishing returns may operate, which may explain the mixed findings in other studies. This has led some researchers to conceptualise a required level of knowledge for teachers teaching their subject at the grade level needed, which is closely aligned to teachers' knowledge of the relevant subject content of the school curriculum, what mathematics educators call 'mathematical knowledge for teaching'.[23] This appears to be a highly relevant concept, when we look beyond academic subjects in primary and secondary schools where the bulk of this research has been conducted; early years educators require specific curricular knowledge of the early years foundation stage (EYFS), and further education draws on the specific knowledge and skills of practitioners in much vocational teaching.

There is also evidence that teachers' content knowledge affects their teaching practices. Baumert and others found that teachers with greater content knowledge

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[20] D Monk, 'Subject area preparation of secondary mathematics and science teachers and student achievement', in 'Economics of Education Review', Volume 13, Issue 2, 1994, pages 125–145; A Wayne and P Youngs, 'Teacher characteristics and student achievement gains: a review', in 'Review of Educational Research', Volume 73, Issue 1, 2003, pages 89–122; D D Goldhaber and D J Brewer, 'Does teacher certification matter? High school teacher certification status and student achievement', in 'Educational Evaluation and Policy Analysis', Volume 22, Issue 2, 2000, pages 129–145.

[21] J Baumert, M Kunter, W Blum, M Brunner, T Voss, A Jordan, and Y-M Tsai, 'Teachers' mathematical knowledge, cognitive activation in the classroom, and student progress', in 'American Educational Research Journal', Volume 47, Issue 1, 2010, pages 133–180; A Wayne and P Youngs, 'Teacher characteristics and student achievement gains: a review', in 'Review of Educational Research', Volume 73, Issue 1, 2003, pages 89–122.

[22] D Monk, 'Subject area preparation of secondary mathematics and science teachers and student achievement', in 'Economics of Education Review', Volume 13, Issue 2, 1994, pages 125–145.

[23] H Hill, 'The nature and predictors of elementary teachers' mathematical knowledge for teaching', in 'Journal for Research in Mathematics Education', Volume, 41, Issue 5, 2010, pages 513–545.

have higher levels of pedagogical content knowledge, which itself leads to greater attention to cognitive activation (developing pupils' conceptual knowledge through, for example, summarising and questioning strategies) in their teaching.[24] Muijs and Reynolds found that teachers who rate their own subject knowledge more highly show higher levels of effective teaching behaviours and better pupil outcomes.[25]

Of course, teachers may have to teach outside of subjects that they are most knowledgeable in. In these cases, the role of support and development are crucial. Well-designed schemes of work are important to support teachers who are teaching out of subject as well as NQTs. In the section on leadership and management, we will discuss some of the evidence that shows that effective continuing professional development (CPD) can play a role in improving subject knowledge.

Early years educators need a wide range of specific knowledge, including on children's physical and mental development, communication, and learning and teaching in specific subjects and areas of development. To teach early mathematics effectively, educators need to know how children develop mathematical understanding and how to assess this development. They need to know how children develop language and literacy, and how to teach early phonics.[26] The types of knowledge early years teachers need are therefore similar too, but also distinct from those of teachers in the later years of primary and beyond. Like other teachers, they require subject knowledge and pedagogical knowledge (though the latter of course here refers to early years pedagogy), but there is a greater stress on knowledge of learners, learning and child development, due to the rapid development of children at this age, and on communication. Teachers need to know how children develop and learn and have a clear understanding of possible next steps in their development and learning. A study in the USA found that quality of the classroom environment was lower in classrooms when teachers lacked formal training in early childhood education.[27]

Knowledge of context, in particular suitable learning environments, has also been put forward as particularly important to this phase of education.[28] There is some evidence that teachers who are confident in their subject knowledge are better at recognising learning opportunities in children's play.[29]

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[24] J Baumert, M Kunter, W Blum, M Brunner, T Voss, A Jordan, and Y-M Tsai, 'Teachers' mathematical knowledge, cognitive activation in the classroom, and student progress', in 'American Educational Research Journal', Volume 47, Issue 1, 2010, pages 133–180.
[25] D Muijs and D Reynolds, 'Teacher beliefs and behaviors: what matters', in 'Journal of Classroom Interaction', Volume 37, Issue 2, 2002, pages 3–15.
[26] 'Education Endowment Foundation Early Years Toolkit', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/evidence-summaries/early-years-toolkit/.
[27] R Pianta, C Howes, D Early, R Clifford, D Bryant and M Burchinal, 'Observations of quality and practices in pre-k classrooms: associations with child outcomes and teacher attributes', paper presented at the biennial Meeting of the Society for Research in Child Development, 2003.
[28] 'Education Endowment Foundation Early Years Toolkit', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/evidence-summaries/early-years-toolkit/.
[29] A Anning and A Edwards, 'Promoting children's learning from birth to five: developing the new early years professional', Open University Press, 1999.

The Effective Pedagogy in Early Years study highlighted the importance of qualified staff in the early years. This study found that, while the most highly qualified staff provided the most direct teaching, they were also the most effective in their interactions with the children. Furthermore, less qualified staff were significantly better pedagogues when they were supervised by qualified teachers.[30]

EIF grade criteria:

> ■ Teachers present subject matter clearly, promoting appropriate discussion about the subject matter being taught. They check learners' understanding systematically, identify misconceptions accurately and provide clear, direct feedback. In so doing, they respond and adapt their teaching as necessary without unnecessarily elaborate or differentiated approaches.
>
> ■ Teachers create an environment that promotes focus on the learner. The resources and materials that teachers select – in a way that does not create unnecessary workload for staff – reflect the provider's ambitious intentions for the course of study and clearly support the intent of a coherently planned curriculum, sequenced towards cumulatively sufficient knowledge and skills for future learning and employment.

Research on effective teaching

We can draw on decades of research in **school** and teacher effectiveness to underpin the importance of effective teaching. Classroom practice, and in particular **teaching effectiveness**, is the single most important factor in school effectiveness. Teaching effectiveness is a strong predictor of pupils' progress throughout school, and having a succession of strong or weak teachers can have lasting effects.[31]

The most consistently replicated finding in this field is that pupils' attainment is strongly affected by the **quantity and pacing of instruction**. Having the opportunity to learn correlates particularly positively with attainment.[32]

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[30] I Siraj-Blatchford, K Sylva, S Muttock, R Gilden and D Bell, 'Researching effective pedagogy in the early years', Department for Education and Skills, 2002.

[31] D Muijs, L Kyriakides, G van der Werf, B Creemers, H Timperley and L Earl, 'State of the art – teacher effectiveness and professional learning', in 'School Effectiveness and School Improvement', Volume 25, Issue 2, 2014, pages 231–256; D Reynolds, S Sammons, B De Fraine, J Van Damme, T Townsend, C Teddlie and S Stringfield, 'Educational effectiveness research (EER): a state-of-the-art review', in 'School Effectiveness and School Improvement', Volume 25, Issue 2, 2014, pages 197–230; L Kyriakides and B P M Creemers, 'A longitudinal study on the stability over time of school and teacher effects on student outcomes', in 'Oxford Review of Education', Volume 34, Issue 5, 2008, pages 521–545; D Muijs and D Reynolds, 'Student background and teacher effects on achievement and attainment in mathematics: a longitudinal study', in 'Educational Research and Evaluation', Volume 9, Issue 3, 2003, pages 289–314; P Sammons, Y Anders, K Sylva, E Melhuish, I Siraj-Blatchford, B Taggart and S Barreau, 'Children's cognitive attainment and progress in English primary schools during key stage 2: investigating the potential continuing influences of pre-school education', in 'Frühpädagogische Förderung in Institutionen', edited by H G Roßbach and H P Blossfeld, VS Verlag für Sozialwissenschaften, 2009.

[32] J Stallings, 'Effective elementary classroom practices', in 'Reaching for excellence: an effective sourcebook', edited by M J Kyle, US Governing Printing Office, 1985; D Muijs and D Reynolds, 'Student

The concept of **opportunity to learn** is a measure of content coverage, which aims to look at what content has actually been taught to pupils. It is determined by the curriculum, but it is also closely connected to factors such as the length of the school year.[33] It is influenced by **time on task**, the amount of time that pupils are actively engaged in learning during the lesson, as opposed to engaging in social and other non-educational activities. In their study of teacher effectiveness in the UK, Muijs and Reynolds found these two factors to be among the most strongly related to pupil outcomes.[34]

Effective teaching

Research on teaching effectiveness suggests that achievement is likely to be maximised when **teachers actively present material** and **structure** it by:

- providing overviews and/or reviews of objectives
- outlining the content to be covered and signalling transitions between different parts of the lesson
- calling attention to main ideas
- reviewing main ideas.

Summary reviews are also important as they integrate and reinforce the learning of major points. These structuring elements not only facilitate the memorising of information but allow pupils to understand it as an integrated whole, and to recognise the relationships between the parts. This does not, of course, mean that lessons need to follow a particular structure or sequence. These elements can occur at different points in a lesson, or over a sequence of lessons, and can be integrated in different ways and at different times.[35]

Clarity of presentation is consistently related to pupils' attainment. Effective teachers are able to communicate clearly and directly with their pupils, without going beyond pupils' levels of comprehension.[36]

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background and teacher effects on achievement and attainment in mathematics: a longitudinal study', in 'Educational Research and Evaluation', Volume 9, Issue 3, 2003, pages 289–314; J Scheerens and R Bosker, 'The foundations of educational effectiveness', Pergamon, 1997.

[33] S Raudenbusch and J D Willms, 'The estimation of school effects', in 'Journal of Educational and Behavioral Statistics', Volume 20, Issue 4, 1995, pages 307–335.

[34] D Muijs and D Reynolds, 'Student background and teacher effects on achievement and attainment in mathematics: a longitudinal study', in 'Educational Research and Evaluation', Volume 9, Issue 3, 2003, pages 289–314.

[35] B Rosenshine and R Stevens, 'Teaching functions', in 'Handbook of research on teaching', 3rd edition, edited by M C Wittrock, Macmillan, 1986, pages 376–391; B P M Creemers and L Kyriakides, 'The dynamics of educational effectiveness: a contribution to policy, practice and theory in contemporary schools', Routledge, 2008.

[36] L Smith and M Land, 'Low-inference verbal behaviors related to teacher clarity', in 'Journal of Classroom Interaction', Volume 17, 1981, pages 37–42; H J Walberg, 'Syntheses of research on teaching', in 'Handbook of Research on Teaching', 3rd edition, edited by M C Wittrock, Macmillan, 1986, pages 214–229; D Muijs and D Reynolds, 'Student background and teacher effects on achievement and

As far as actual teaching is concerned, research shows that, although there is a significant amount of teacher talk in the classes of effective teachers, most of it is focused on academic content, and much of it involves asking questions and giving feedback rather than extended lecturing.[37] The focus on teachers actively presenting materials should, therefore, not be seen as lecturing. Questioning of pupils by the teacher, and of the teacher by pupils and by pupils of each other, can be used to check pupils' understanding and can help them clarify and verbalise their thinking. This will help them develop a sense of mastery.[38] Information is best presented with a degree of repetition, particularly in the form of repeating and reviewing key concepts.[39]

Effective questioning is one of the most widely studied aspects of teaching. We therefore have considerable evidence in this area. Teachers provide substantive feedback to pupils, resulting either from pupils' questions or from answers to teachers' questions. Most questions can elicit correct or at least substantive answers. Correct answers need to be acknowledged in a positive but businesslike fashion. When a pupil answers a question partially correctly, the teacher can prompt that pupil to find the remaining part of the answer before moving on to the next pupil. When a pupil answers a question incorrectly, the teacher needs to point out swiftly that the answer is wrong. If the pupil has answered incorrectly due to inattention or carelessness, the teacher needs to try and prompt the pupil to answer correctly. If the answer is incorrect due to lack of knowledge, the teacher can move swiftly on to the next pupil. Teachers need to make sure that girls and shy pupils, who may be less assertive, have the chance to answer questions.[40]

The types of questions asked are typically varied and depend on the knowledge and skills to be mastered. The best strategy would appear to be to use a mixture of recall and higher-order questions, increasing the latter as the level of understanding increases. This does not mean that a mix should be used in all lessons; depending on

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attainment in mathematics: a longitudinal study', in 'Educational Research and Evaluation', Volume 9, Issue 3, 2003, pages 289–314; D Muijs, M West and M Ainscow, 'Why network? Theoretical perspectives on networking', in 'School Effectiveness and School Improvement', Volume 21, Issue 1, 2010, pages 5–26.

[37] L Kyriakides and B P M Creemers, 'A longitudinal study on the stability over time of school and teacher effects on student outcomes', in 'Oxford Review of Education', Volume 34, Issue 5, 2008, pages 521–545.

[38] F Smith, F Hardman, K Wall and M Mroz, 'Interactive whole class teaching in the National Numeracy and Literacy Strategies', in 'British Educational Research Journal', Volume 30, Issue 3, 2004, pages 395–411; J Brophy and T L Good, 'Teacher behavior and student achievement', in 'Handbook of Research on Teaching', 3rd edition, edited by M C Wittrock, MacMillan, 1986, pages 328–375; B P M Creemers, 'The effective classroom', Cassell, 1994.

[39] J Scheerens and R Bosker, 'The foundations of educational effectiveness', Pergamon, 1997; T Seidel and R J Shavelson, 'Teaching effectiveness research in the past decade: the role of theory and research design in disentangling meta-analysis results', in 'Review of Educational Research', Volume 77, Issue 4, 2007, pages 454–499.

[40] L Kyriakides and B P M Creemers, 'The effects of teacher factors on different outcomes: two studies testing the validity of the dynamic model', in 'Effective Education', Volume 1, Issue 1, 2009, pages 61–85; D Muijs and D Reynolds, 'Effective teaching, evidence and practice', 4th edition, Sage, 2017; J Brophy and T L Good, 'Teacher behavior and student achievement', in 'Handbook of Research on Teaching', 3rd edition, edited by M C Wittrock, MacMillan, 1986, pages 328–375; M Askew and D William, 'Recent research in mathematics education 5–16: Ofsted Reviews of Research', HMSO, 1995.

where the lesson sits within a sequence of lessons about a particular topic, the balance can be strongly towards one or the other. Teachers can use both product questions (calling for a single response from pupils) and process questions (calling for explanations from pupils). Again, the balance will depend on the lesson and topic. Pupils can be encouraged to ask questions, which can be redirected to the class before being answered by the teacher. Relevant pupil comments can be incorporated into the lesson.[41]

Group activities and paired work can contribute to learning, but to work together effectively pupils will require support, and tasks must be clearly structured. If it is to have benefits, group work requires both that pupils are sufficiently prepared, and that the activity is sufficiently structured, both things that place demands on teachers. Pupils need to be able to share, participate, listen and communicate, and tasks need to be structured so that every pupil has a clear and distinct role (to avoid 'free rider' effects). Pupils are therefore likely to benefit from explicit guidance on how to work collaboratively, from practising routines needed in effective groups and from having clearly assigned roles within a group work task. Teacher prompts and questions need to structure discussion, and active involvement is required to avoid misconceptions being reinforced. Group work should be carefully sequenced alongside other lessons and activities to ensure that pupils have sufficient prior knowledge.[42]

Pupils are likely to make progress at different rates. As a consequence, they may require different levels and types of support from teachers to succeed.[43] **In-class**

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[41] F Smith, F Hardman, K Wall and M Mroz, 'Interactive whole class teaching in the National Numeracy and Literacy Strategies', in 'British Educational Research Journal', Volume 30, Issue 3, 2004, pages 395–411; D Muijs, M West and M Ainscow, 'Why network? Theoretical perspectives on networking', in 'School Effectiveness and School Improvement', Volume 21, Issue 1, 2010, pages 5–26; L Kyriakides and B P M Creemers, 'The effects of teacher factors on different outcomes: two studies testing the validity of the dynamic model', in 'Effective Education', Volume 1, Issue 1, 2009, pages 61–85; D Muijs and D Reynolds, 'Effective teaching, evidence and practice', 4th edition, Sage, 2017; C Evertson, C Anderson, L Anderson and J E Brophy, 'Relationship between classroom behaviors and student outcomes in junior high mathematics and English classes', in 'American Educational Research Journal', Volume 17, Issue 1, 1980, pages 43–60; J Brophy and T L Good, 'Teacher behavior and student achievement', in 'Handbook of Research on Teaching', 3rd edition, edited by M C Wittrock, MacMillan, 1986, pages 328–375; M Askew and D William, 'Recent research in mathematics education 5–16: Ofsted Reviews of Research', HMSO, 1995.

[42] G Capar and K Tarim, 'Efficacy of the cooperative learning method on mathematics achievement and attitude: a meta-analysis research', in 'Educational Sciences: Theory and Practice', Volume 15, Issue 2, 2015, pages 553–559; P Kutnick and P Blatchford, 'Effective group work in primary school classrooms', Springer, 2014; 'Toolkit: collaborative learning', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/collaborative-learning/; P A Kirschner, J Sweller, F Kirschner and J Zambrano, 'From cognitive load theory to collaborative cognitive load theory', in 'International Journal of Computer-Supported Collaborative Learning', Volume 13, Issue 2, 2018, pages 213–233; E Cohen and R Lotan, 'Designing group work: strategies for heterogeneous classrooms', Teachers College Press, 2014; D Muijs and D Reynolds, 'Effective teaching, evidence and practice', 4th edition, Sage, 2017; D W Johnson and R T Johnson, 'Joining together. Group theory and group skills', Prentice Hall, 1999.

[43] J Hattie, 'Visible learning: a synthesis of meta-analysis relating to achievement', Routledge, 2009; K Kriegbaum, N Becker and B Spinath, 'The relative importance of intelligence and motivation as predictors of school achievement: a meta-analysis', in 'Educational Research Review', Volume 25, Issue 2, 2018, pages 120–148.

differentiation, through providing differentiated teaching, activities or resources, has generally not been shown to have much impact on pupils' attainment. In Scheerens and Bosker's meta-analysis of school effectiveness research, for example, this factor showed no or a very weak relationship with pupils' outcomes.[44] Hattie likewise found the effect of differentiation to be among the weakest in his influential work on 'Visible Learning'.[45]

On the other hand, **adapting teaching** in a responsive way, for example by providing focused support to pupils who are not making progress, is likely to improve outcomes.[46] However, this type of adaptive teaching should be clearly distinguished from forms of differentiation that cause teachers to artificially create distinct tasks for different groups of pupils or to set lower expectations for particular pupils. In addition, it should be clearly stated that there is no evidence that pupils have distinct and identifiable learning styles.[47] Trying to design tasks with this misconception in mind will increase teachers' workload but is very unlikely to improve learning.

There is similar evidence of the importance of effective teaching from large-scale studies in **early years**. The 'Effective provision of pre-school education' (EPPE) study shows that good early education has significant lasting effects across primary schooling.[48] The recent 'Study of early education and development' (SEED) confirms this.[49] Other studies using data from Germany, New Zealand and the USA show similar effects.[50] This is true for both cognitive and social-emotional outcomes and is particularly important for children from disadvantaged backgrounds.[51] Most studies suggest that high-quality provision includes both play and adult-directed activities, and

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[44] J Scheerens and R Bosker, 'The foundations of educational effectiveness', Pergamon, 1997.

[45] J Hattie, 'Visible learning: a synthesis of meta-analysis relating to achievement', Routledge, 2009.

[46] M I Deunk, A E Smale-Jacobse, H de Boer, S Doolaardand and R J Bosker, 'Effective differentiation practices: a systematic review and meta-analysis of studies on the cognitive effects of differentiation practices in primary education', in 'Educational Research Review', Volume 24, Issue 1, 2018, pages 31–54; 'Toolkit: individualised instruction', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/individualised-instruction/.

[47] H Pashler, M McDaniel, D Rohrer and R Bjork, 'Learning styles: concepts and evidence', in 'Psychological Science in the Public Interest', Volume 9, Issue 3, 2008; D T Willingham, 'The myth of learning styles', in 'Change', Volume 42, Issue 5, 2010, pages 32–35.

[48] K Sylva, E Melhuish, P Sammons, I Siraj-Blatchford and B Taggart, 'Early childhood matters', Routledge, 2010.

[49] E Melhuish, J Gardiner and S Morris, 'Study of early education and development (SEED): impact study on early education use and child outcomes up to age four: research report', Department for Education, 2018.

[50] Y Anders, C Grosse, H-G Rossbach, S Ebert and S Weinert, 'Preschool and primary school influences on the development of children's early numeracy skills between the ages of 3 and 7 years in Germany', in 'School Effectiveness and School Improvement', Volume 24, Issue 2, 2013, pages 195–211; C Wylie and J Thompson, 'The long-term contribution of early childhood education to children's performance: evidence from New Zealand', in 'International Journal of Early Years Education', Volume 11, Issue 1, 2003, pages 69–78; C Ruhm, K A Magnuson and J Waldfogel, 'Does prekindergarten improve school preparation and performance?', in 'Economics of Education Review', Volume 26, Issue 1, 2007, pages 33–51.

[51] E Melhuish, J Gardiner and S Morris, 'Study of early education and development (SEED): impact study on early education use and child outcomes up to age four: research report', Department for Education, 2018.

minimises time spent on classroom management (for example, transitions, children waiting for their turn to do an activity).[52] Moreover, play and adult-directed activities are distinct, and can fulfil different aims. Well-planned play is important to help children practise the use of knowledge and build up skills, to explore and make sense of the world around them, to learn impulse control and the importance of rules, and to learn to communicate and cooperate with others.[53]

Effective pedagogy consists of both teaching and the provision of instructive and stimulating learning environments and routines, and the latter need to be well planned and developed with clear goals on what learning is intended. There is also evidence of the importance of creating a language-rich environment, teacher sensitivity, smaller child–adult ratios and lower staff turnover. Communication and responding to children is a particularly salient skill for early years practitioners, especially with the youngest children. Sustained shared thinking, where adults engage in longer two-way communication with the child to develop their thinking, has been found to characterise effective early years settings.[54] Practitioners need to be able to observe children and respond to what they see, based on their knowledge of child development. As for older pupils, teaching and curriculum need to build on the existing knowledge and skills of children.[55]

Both early reading and early numeracy have been found to have a positive impact. Early numeracy aims to develop number skills and improve young children's knowledge and understanding of early mathematical concepts, through a combination of structured and more informal approaches. The most effective practice combines direct teaching and child-led activities, focuses on a particular discrete skill (such as counting) and allocates a set amount of time to this. In early literacy, a similarly varied approach is required, including activities that aim to develop letter knowledge and early phonics,

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[52] J Hall, K Sylva, P Sammons, P Melhuish, I Siraj-Blatchford and B Taggart, 'Can preschool protect young children's cognitive and social development? Variation by center quality and duration of attendance', in 'School Effectiveness and School Improvement', Volume 24, Issue 2, 2013, pages 155–176; A de Haan, E Elbers, H Hoofs and P Leseman, 'Targeted versus mixed preschools and kindergartens: effects of class composition and teacher-managed activities on disadvantaged children's emergent academic skills', in 'School Effectiveness and School Improvement', Volume 24, Issue 2, 2013, pages 177–194.

[53] 'Teaching and play in the early years – a balancing act?', Ofsted, July 2015; https://www.gov.uk/government/publications/teaching-and-play-in-the-early-years-a-balancing-act; 'Reception curriculum in good and outstanding primary schools: bold beginnings', Ofsted, January 2018; https://www.gov.uk/government/publications/reception-curriculum-in-good-and-outstanding-primary-schools-bold-beginnings.

[54] I Siraj-Blatchford, K Sylva, S Muttock, R Gilden and D Bell, 'Researching effective pedagogy in the early years', Department for Education and Skills, 2002.

[55] D Stipek and T Ogawa, 'Early childhood education: building community systems for young children', University of California at Los Angeles, Center for Healthier Children, Families and Communities, 2000; J Hall, K Sylva, P Sammons, P Melhuish, I Siraj-Blatchford and B Taggart, 'Can preschool protect young children's cognitive and social development? Variation by center quality and duration of attendance', in 'School Effectiveness and School Improvement', Volume 24, Issue 2, 2013, pages 155–176; I Siraj-Blatchford, K Sylva, S Muttock, R Gilden and D Bell, 'Researching effective pedagogy in the early years', Department for Education and Skills, 2002; 'Teaching and play in the early years – a balancing act?', Ofsted, July 2015; https://www.gov.uk/government/publications/teaching-and-play-in-the-early-years-a-balancing-act.

storytelling and reading to the group. Communicative approaches, in which adults help to develop children's talking, and verbal expression through modelling language and reasoning, have been found to have significant positive effects. These approaches focus on reading aloud, talking about what was read, extending spoken vocabulary by introducing new words in context, and drawing attention to letters and sounds.[56] Early reading and numeracy are particularly important in settings serving disadvantaged communities.[57]

EIF grade criterion:

> ■ Over the course of study, teaching is designed to help learners to remember in the long term the content they have been taught and to integrate new knowledge into larger concepts.

Research on memory and learning

Learning is at least in part defined as a change in long-term memory. As Sweller and others have pointed out, 'if nothing in the long-term memory has been altered, nothing has been learned', although there are, of course, other aspects to learning.[58]

It is, therefore, important that we use approaches that help pupils to integrate new knowledge into the long-term memory and make enduring connections that foster understanding.

For this, we can draw on a growing evidence base from the 'learning sciences'. Learning sciences is a relatively new interdisciplinary field that seeks to apply understanding generated by cognitive science to classroom practice. While more evaluations in English schools would be valuable,[59] this field is increasingly generating moderate to strong evidence of practices that can be used to enhance learning across phases and remits.[60]

It is, for example, becoming increasingly clear that using **spaced or distributed practice**, where knowledge is rehearsed for short periods over a longer period of time, is more effective than so-called **massed practice**, where we study more intensively for a shorter period of time. It is therefore good practice to block learning and repeat

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[56] 'Education Endowment Foundation Early Years Toolkit', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/evidence-summaries/early-years-toolkit/.
[57] 'Teaching and play in the early years – a balancing act?', Ofsted, July 2015; https://www.gov.uk/government/publications/teaching-and-play-in-the-early-years-a-balancing-act; 'Reception curriculum in good and outstanding primary schools: bold beginnings', Ofsted, January 2018; https://www.gov.uk/government/publications/reception-curriculum-in-good-and-outstanding-primary-schools-bold-beginnings.
[58] J Sweller, 'Cognitive load theory', in 'Psychology of Learning and Motivation', Volume 55, 2011, pages 37–76.
[59] L O'Hare, P Stark, C McGuinness, A Biggart and A Thurston, 'Spaced learning: SMART spaces evaluation', Education Endowment Foundation, 2017; https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/spaced-learning/.
[60] D Willingham, 'When and how neuroscience applies to education', in 'Phi Delta Kappan', 2008, pages 421–423.

practice over time, as this leads to better long-term retention of knowledge.[61] A related practice is **interleaving**. Traditionally, most schools use blocking, where practice of particular knowledge happens in blocks (for example, AAABBBCCC). In interleaving, we instead mix practice of A, B and C (for example, ABCABCABC). There is growing evidence that this can improve retention, and research in mathematics is particularly promising.[62]

Another important practice for effective retention of knowledge in the long-term memory is **retrieval practice**. Retrieval practice involves recalling something you have learned in the past and bringing it back to mind; it is far more effective than more frequently used strategies such as re-reading. Retrieval practice strengthens memory and makes it easier to retrieve the information later.[63] Retrieval practice needs to occur a reasonable time after the topic has been initially taught and needs ideally to take the form of testing knowledge, either by the teacher (for example questioning using flash cards, a test or getting pupils to write a concept map) or through pupil self-testing. It is important that feedback on accuracy is provided either by the teacher or by the pupil checking accuracy for themselves.

What is less clear from the evidence is the amount of time that needs to elapse before retesting or spacing, which appears to depend in part on the lag between when the content was initially taught and when it was tested.[64]

Elaboration is defined as describing and explaining something learned to others in some detail. Ideally, this involves making connections among ideas and connecting the material to one's memory and experiences. It can also be useful for learners to ask themselves or each other questions that require making connections between ideas or explaining them. This can clearly be built into classroom activities.[65]

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[61] D Rohrer and K Taylor, 'The effects of overlearning and distributed practise on the retention of mathematics knowledge', in 'Applied Cognitive Psychology', Volume 20, Issue 9, 2006, pages 1209–1224; K A Rawson and W Kintsch, 'Rereading effects depend on time of test', in 'Journal of Educational Psychology', Volume 97, Issue 1, 2005, pages 70–80.

[62] L E Richland, R A Bjork, J R Finley and M C Linn, 'Linking cognitive science to education: generation and interleaving effects', in 'Proceedings of the twenty-seventh annual conference of the Cognitive Science Society', edited by B G Bara, L Barsalou and M Bucciarelli, Lawrence Erlbaum, 2005; D Rohrer, R Dedrick and S Stershic, 'Interleaved practice improves mathematics learning', in 'Journal of Educational Psychology', Volume 107, Issue 3, 2015, pages 900–908.

[63] J Barenberg, U-R Roeder and S Dutke, 'Students' temporal distributing of learning activities in psychology courses: factors of influence and effects on the metacognitive learning outcome', in 'Psychology Learning and Teaching', Volume 17, Issue 3, 2018, pages 257–271; H L Roediger and J D Karpicke, 'Test-enhanced learning: taking memory tests improves long-term retention', in 'Psychological Science', Volume 17, Issue 3, 2006, pages 249–255.

[64] C E Küpper-Tetzel and E Erdfelder, 'Encoding, maintenance, and retrieval processes in the lag effect: a multinomial processing tree analysis', in 'Memory', Volume 20, 2012, pages 37–47.

[65] K Bisra, Q Liu and J C Nesbit, 'Inducing self-explanation: a meta-analysis', in 'Educational Psychology Review', Volume 30, 2018, pages 703–725; T Willoughby and E Wood, 'Elaborative interrogation examined at encoding and retrieval', in 'Learning and Instruction', Volume 4, Issue 2, 1994, pages 139–149; C E Weinstein, 'Teaching cognitive elaboration learning strategies', in 'Learning Strategies', edited by H F O'Neil, Jr, Academic Press, 1978; M Pressley, M A McDaniel, J E Turnure, E Wood and M Ahmad, 'Generation and precision of elaboration: effects on intentional and incidental learning', in 'Journal of

In presenting material, teachers can make use of **dual coding**. Dual coding theory suggests that representing information both visually and verbally enhances learning and retrieval from memory. The principle underlying this is that visual and verbal information are processed through different channels in the brain, creating separate representations for information processed in each channel.[66] This means that, when recalling information, we can use either the word or the picture associated with it, thus increasing the likelihood that we will remember the concept, as using one representation does not mean we lose the opportunity to use the other. This principle of two memory systems has received experimental support.[67] In terms of classroom practice, dual coding theory suggests the use of visuals to support teaching.[68]

An important contribution to learning science is made by **cognitive load theory (CLT)**. CLT is concerned with the architecture of memory and the brain, and in particular the capacity of the short-term memory to process information. The long-term memory consists of a range of schemata, which are complex structures that link knowledge and create meaning and which are built up over time. Experts possess far more detailed and complex schemata than novice learners. Learning is essentially about changing those schemata, through acquiring knowledge and making connections with different schemata. However, before entering long-term memory and developing schemata, information must first be processed by the short-term or working memory. As this has limited capacity, retention of knowledge and development of schemata will not happen if the working memory is overloaded.[69] In educational terms, this suggests teaching in small chunks and not organising activities that require too much memory capacity, until learners acquire the knowledge that allows them to spend less time processing content. The theory has significant empirical support,[70] although it needs to

Experimental Psychology: Learning, Memory, and Cognition', Volume 13, Issue 2, 1987, pages 291–300; M A McDaniel and C M Donnelly, 'Learning with analogy and elaborative interrogation', in 'Journal of Educational Psychology', Volume 88, Issue 5, 1996, pages 508–519.

[66] A Paivio, 'Mental representations: a dual coding approach', Oxford University Press, 1990; J M Clark and A Paivio 'Dual coding theory and education', in 'Educational Psychology Review', Volume 3, 1991, pages 149–210.

[67] R E Mayer and R Moreno, 'A split-attention effect in multimedia learning: evidence for dual processing systems in working memory', in 'Journal of Educational Psychology', Volume 90, 1998, pages 312–320; J Kounios and P J Holcomb, 'Concreteness effects in semantic processing: ERP evidence supporting dual-coding theory', in 'Journal of Experimental Psychology: Learning, Memory, and Cognition', Volume 20, 1994, pages 804–823; P J Holcomb, J Kounios, J E Anderson and W C West, 'Dual coding, context availability, and concreteness effects in sentence comprehension: an electrophysiological investigation', in 'Journal of Experimental Psychology: Learning, Memory, and Cognition', Volume 25, 1999, pages 721–742.

[68] A Paivio, 'Dual coding theory and education', draft chapter for the conference on 'Pathways to Literacy Achievement for High Poverty Children', The University of Michigan School of Education, 29 September–1 October, 2006;
https://www.researchgate.net/publication/225249172_Dual_Coding_Theory_and_Education.

[69] P A Kirschner, J Sweller and R E Clark, 'Why minimal guidance during instruction does not work: an analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching', in 'Educational Psychologist', Volume 41, Issue 2, 2006, pages 75–86.

[70] P A Kirschner, 'Cognitive load theory: implications of cognitive load theory on the design of learning', in 'Learning and Instruction', Volume 12, Issue 1, 2002, pages 1–10; F Paas, A Renkl and J Sweller, 'Cognitive load theory and instructional design: recent developments', in 'Educational Psychologist', Volume 38, 2003, pages 1–4.

be tempered by an understanding of the **expertise reversal effect**. This shows that, among expert learners in a particular subject, enquiry-based approaches work better than the more explicit teaching that works best with novice learners.[71]

EIF grade criterion:

> ■ Teachers and leaders use assessment well, for example to help learners embed and use knowledge fluently or to check understanding and inform teaching. Leaders understand the limitations of assessment and do not use it in a way that creates unnecessary burdens for staff or learners.

Research on assessment

There is clear evidence that, if judiciously and effectively employed, assessment can have a positive impact on learning and teaching.

Formative and summative assessment

Formative assessment is designed to inform the teacher about their pupils' performance, knowledge and skills, and this information is then used to plan lessons or remediation to improve pupils' learning. A key part of this type of assessment is feedback to pupils to help them to learn more effectively. Formative assessment has been found to have a significant positive effect on attainment in schools, colleges and early years settings.[72] **Summative assessment** is more useful for general quality control and to provide a picture of how well a pupil (or group of pupils) has performed over a time period on a set of learning goals in a particular subject. In contrast to the view that the two are diametrically opposed, in practice many forms of assessment can be used for both purposes.

Formative assessment involves using assessment in the classroom to raise pupils' achievement. It is based on the idea that pupils will improve most if they understand the aim of their learning, where they are in relation to this aim and how they can achieve the aim (or close the gap in their knowledge). There is a range of evidence that suggests that formative assessment and feedback can improve pupils' learning and attainment. Of course, formative assessment, like most other educational interventions, will not always work for all pupils, and not all studies find positive effects.[73] This is partly because implementation can vary widely, not least as there are a lot of

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[71] S Kalyuga, 'Expertise reversal effect and its implications for learner-tailored instruction', in 'Educational Psychology Review', Volume 19, 2007, pages 509–539.

[72] P Black and D William, 'Inside the black box: raising standards through classroom assessment', in 'Phi Delta Kappan', Volume 80, Issue 2, 1998, pages 139–144; J Hattie, 'Visible learning: a synthesis of meta-analysis relating to achievement', Routledge, 2009; I Siraj-Blatchford, K Sylva, S Muttock, R Gilden and D Bell, 'Researching effective pedagogy in the early years', Department for Education and Skills, 2002.

[73] R E Bennett, 'Formative assessment: a critical review', in 'Assessment in Education: Principles, Policy and Practice', Volume 18, Issue 1, 2011, pages 5–25.

misinterpretations of what formative assessment means. In order for it to have a positive impact, two conditions need to be met:

- pupils are given advice on how to improve
- pupils act on that advice by using the materials provided by the teacher, going to the teacher for help, or working with other pupils.[74]

Testing

There is a popular misconception that testing and quizzing are detrimental to learners and should be replaced exclusively by formative assessment. This is a mistake, as use of low-stakes testing can contribute to learning in valuable ways. The importance of retrieval practice has been demonstrated,[75] and this research shows strong evidence for the **testing effect**, that is, the positive impact of the mental process of learners working to recall knowledge they have previously learned. This has been demonstrated in a large number of experiments, which show that learners who take a test shortly after studying a piece of material do better on a final test than those who do not, even if no feedback is given on the initial test. For that to be the case, the test needs to have a medium to high success rate.[76] Difficult but successful retrievals work better than easier successful retrievals.[77] The fact that testing is useful for memory does not of course mean that it needs to be formally recorded as part of data collection or as a form of internal accountability measure.

Using assessment to guide teaching and curriculum development

Formative assessment is not just about what learners know or can do, but also about the way that **teachers themselves use assessment**. Teachers can use assessment to help them plan lessons, adapt lessons to measured gaps in knowledge and skills, and if necessary re-teach where problems persist. To do this effectively requires pupils to be assessed at the start of a unit of learning, so that instruction can be adapted to the level that pupils are starting from. Assessment needs to be regularly repeated, and instruction adapted to the results of each assessment.[78]

Assessment emerged as a key factor in phase 2 of our curriculum research programme. In the schools that were particularly invested in curriculum development,

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[74] D William, 'What is assessment for learning?', in 'Studies in Educational Evaluation', Volume 37, 2011, pages 3–14.
[75] J Barenberg, U-R Roeder and S Dutke, 'Students' temporal distributing of learning activities in psychology courses: factors of influence and effects on the metacognitive learning outcome', in 'Psychology Learning and Teaching', Volume 17, Issue 3, 2018, pages 257–271.
[76] H L Roediger and J D Karpicke, 'Test-enhanced learning: taking memory tests improves long-term retention', in 'Psychological Science', Volume 17, Issue 3, 2006, pages 249–255.
[77] M Pyc and K Rawson, 'Testing the retrieval effort hypothesis: does greater difficulty correctly recalling information lead to higher levels of memory?', in 'Journal of Memory and Language', Volume 60, Issue 4, 2009, pages 437–447.
[78] B MacCallum, 'Formative assessment: implications for classroom practice', Institute of Education, 2000; D Muijs, L Kyriakides, G van der Werf, B Creemers, H Timperley and L Earl, 'State of the art – teacher effectiveness and professional learning', in 'School Effectiveness and School Improvement', Volume 25, Issue 2, 2014, pages 231–256.

most of the leaders we spoke to valued the use of both formative and summative assessment for capturing pupils' progression through the curriculum, although the ways in which they applied this varied. In the best cases, schools used ongoing assessment to check pupils' understanding of the main curriculum elements. They then responded appropriately through adapting their teaching. There was an expectation that the information captured from assessment was to be used for identifying gaps in pupils' knowledge, skills and depth of understanding, and to inform and improve future curriculum design.

Overuse of assessment

The overall value of assessment should of course not obscure the fact that overuse and questionable practice have emerged as major issues in the English education system, and have contributed to overly high workloads among teachers, who report spending eight hours a week on marking.[79] A misconception has arisen that assessment needs to consist to a large extent of the provision of detailed written feedback and so-called 'deep' marking,[80] or of the production of photographic evidence on every aspect of child development. As the review above suggests, this is far from the case, and verbal feedback is an appropriate form of feedback in many cases. In early years settings, feedback provided during activities has been found to be particularly effective.[81]

There are a number of issues associated with the overuse of assessment for measuring progress, which should lead to some caution in their use. Existing tests and systems used in **schools** have been found to be only partially accurate predictors of actual attainment at school level and tend to provide little information on the progress of individual pupils. Data on small groups of pupils is highly susceptible to the effect of one or a small number of individuals with unusually high or low scores; so-called 'outlier effects'.[82] Therefore, overuse of such data is unlikely to have many benefits, while contributing to increased workload.

Research on reading

Reading is an essential element of all stages of education. This is underlined by the inclusion of the following EIF grade criterion:

> ■ A rigorous approach to the teaching of reading develops learners' confidence and enjoyment in reading. At the early stages of learning to read, reading materials are closely matched to learners' phonics knowledge.

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[79] J Higton, S Leonardi, N Richards, A Choudoury, N Sofroniou and D Owen, 'Teacher workload survey 2016', Department for Education, 2017.
[80] Independent Teacher Workload Review Group, 'Eliminating unnecessary workload around marking', Department for Education, 2016.
[81] I Siraj-Blatchford, K Sylva, S Muttock, R Gilden and D Bell, 'Researching effective pedagogy in the early years', Department for Education and Skills, 2002.
[82] R Allen, J Jerrim, M Paraweshwaram and D Thomson, 'Properties of commercial tests in the EEF database', Education Endowment Foundation, 2018.

However, the research in this section relates specifically to the **schools** remit, and in particular to EYFS, key stage 1 and key stage 2.

School inspection handbook criteria:

- Reading is prioritised to allow pupils to access the full curriculum offer.
- A rigorous and sequential approach to the reading curriculum develops pupils' fluency, confidence and enjoyment in reading. At all stages, reading attainment is assessed and gaps are addressed quickly and effectively for all pupils. Reading books connect closely to the phonics knowledge pupils are taught when they are learning to read.
- The sharp focus on ensuring that younger children gain the phonics knowledge and language comprehension necessary to read, and the skills to communicate, gives them the foundations for future learning.

If pupils cannot read, they will not be able to access the curriculum, and will be disadvantaged for life. Early deficits can persist throughout primary education, and children who lag behind in reading during pre-school will typically continue to do so for the rest of their schooling.[83] Therefore, while at the later stages – essentially from the start of key stage 2 onwards – we have stressed the importance of a broad curriculum, this is not necessarily the case in key stage 1 or below, where mastering the basic knowledge and skills is crucial.

There is an extensive body of evidence on teaching reading, much of it conducted under the auspices of the National Institute of Child Health and Human Development (NICHD) in the USA. The NICHD has conducted a large number of systematic studies over almost five decades, involving over 350,000 children. In addition to conducting its own studies, NICHD also conducts extensive syntheses of existing research.[84]

These studies show that explicit and systematic teaching of the manipulation of phonemes (the smallest unit of sound in a language) and phonemic awareness (the ability to identify phonemes in written words) is crucial and should be continued until children can automatically process this information. Direct instruction in reading comprehension strategies was found to be effective. Children's reading development is also aided by a literature-rich environment and practice in reading authentic literature and familiar materials. Reading aloud is a good way of developing vocabulary,

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[83] A Olofsson and J Niedersoe, 'Early language development and kindergarten phonological awareness as predictors of reading problems', in 'Journal of Learning Disabilities', Volume 32, Issue 5, 1999, pages 464–472; B R Foorman, D J Francis, S E Shaywitz, B A Shaywitz and J M Fletcher, 'The case for early reading intervention', in 'Foundations of reading acquisition and dyslexia: implications for early intervention', edited by B A Blachman, Lawrence Erlbaum Associates, 1997, pages 243–264; R Sparks, J Patton and A Murdoch, 'Early reading success and its relationship to reading achievement and reading volume: replication of "10 years later"', in 'Reading and Writing', Volume 27, Issue 1, 2014, pages 189–211.

[84] For example, G R Lyon, 'The NICHD research program in reading development, reading disorders and reading instruction. NICHD: keys to successful learning summit', 1999; https://eric.ed.gov/?id=ED430366.

language expression and expressive and receptive language skills. However, while important, authentic literature and rich contexts are not a suitable replacement for explicit teaching of phonics decoding skills.[85] The NICHD research has shown that guessing words from their context (the text in which they are embedded) is only accurate about 10% to 20% of the time.

The evidence therefore states that children need to be taught:

- phonemic awareness (the sounds that make up words such as c/a/t)
- the sound–spelling relationships in words
- how to say the sounds that make up words

and to do this by:

- using texts that are made up of words that use the sound–spelling relationships children have learned
- using interesting and authentic stories to develop vocabulary and language comprehension.

Early intervention for pupils with reading difficulties is crucial, as the intensity and duration of reading interventions need to increase as children get older.[86]

These findings in favour of phonics instruction have been replicated in a large number of subsequent studies and syntheses, including in the UK.[87] Phonics instruction would appear to be particularly beneficial to pupils from disadvantaged and ethnic minority backgrounds.[88]

There is evidence that the **systematic synthetic** approach is particularly effective. In an influential study in Scotland, Johnston and Watson compared a group of children

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[85] G R Lyon, 'The NICHD research program in reading development, reading disorders and reading instruction. NICHD: keys to successful learning summit', 1999; https://eric.ed.gov/?id=ED430366; L C Moats, 'Neither/nor: resolving the debate between whole language and phonics. Lecture given at the 1996 Washington Summit Conference of Learning Disabilities', 1996; transcript available at: https://www.greenwoodinstitute.org/resources/res-nor.html.

[86] G R Lyon, 'The NICHD research program in reading development, reading disorders and reading instruction. NICHD: keys to successful learning summit', 1999; https://eric.ed.gov/?id=ED430366.

[87] C J Torgerson, G Brooks and J Hall, 'A systematic review of the research literature on the use of phonics in the teaching of reading and spelling', 'DFES Research Report 711', University of Sheffield, 2006; S Gorard, B H See and N Siddiqui, 'Fresh Start: evaluation report and executive summary', Education Endowment Foundation, 2014; S Machin, S McNally and M Viarengo, 'Changing how literacy is taught: evidence on synthetic phonics', in 'American Economic Journal: Economic Policy', Volume 10, Issue 2, 2018, pages 217–241; 'Putting evidence to work: a schools guide to implementation', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/tools/guidance-reports/; G McArthur, P M Eve, K Jones, E Banales, S Kohnen, T Anandakumar, L Larsen, E Marinus, H C Wang and A Castles, 'Phonics training for English-speaking poor readers', in 'Cochrane Database of Systematic Reviews', Volume 12, 2018; http://dx.doi.org/10.1002/14651858.CD009115.pub2.

[88] W Jeynes, 'A meta-analysis of the relationship between phonics instruction and minority elementary school student achievement', in 'Education and Urban Society', Volume 23, Issue 3, 2007, pages 256–271.

taught using synthetic phonics with a group taught using analytic phonics; they found the former to be more effective.[89] A Dutch study reported similar findings.[90] There is also some evidence of long-term effects. A follow-up study in Scotland compared 10-year-old boys and girls who had learned to read using analytic or synthetic phonics methods as part of their early literacy programmes. The pupils taught using synthetic phonics had better word reading, spelling and reading comprehension.[91]

The research summarised above clearly points to the crucial importance of direct instruction in phonics for developing pupils' reading ability. This is especially the case for pupils from lower socioeconomic status (SES) backgrounds and pupils who are having difficulties reading. Phonemic awareness and the alphabetic principle need to be explicitly taught until they become automatic.

Phonics is only one component of learning to read, however. Effective evidence-based reading instruction has five essential components: phonemic awareness, phonics, fluency, vocabulary and comprehension, all of which matter, providing phonemic awareness and decoding skills are acquired as an essential precondition.[92] Generating enthusiasm for reading and developing pupils' contextual understanding through exposure to interesting, authentic literature are also important.

Fluency is an important contributor to reading comprehension, after children have achieved secure knowledge of phonics. Fluent readers can read quickly, accurately and with appropriate stress and intonation, which aids comprehension by freeing pupils' cognitive resources to focus on meaning.[93]

There is clear and consistent evidence about the importance of vocabulary development. In addition, a range of studies highlight the extent to which there can be a vocabulary gap between children from disadvantaged families and their peers.[94] While some older studies have been challenged,[95] the majority of studies, including a

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[89] R S Johnston and J Watson, 'Accelerating the development of reading, spelling and phonemic awareness', in 'Reading and Writing', Volume 17, Issue 3, 2004, pages 327–357.

[90] S De Graaff, A M T Bosman, F Hasselman and L Verhoeven, 'Benefits of systematic phonics instruction', in 'Scientific Studies of Reading', Volume 13, Issue 4, 2009, pages 318–333.

[91] R S Johnston, S McGeown and J E Watson, 'Long-term effects of synthetic versus analytic phonics teaching on the reading and spelling ability of 10 year old boys and girls', in 'Reading and Writing', Volume 25, Issue 6, 2012, pages 1368–1384.

[92] J Buckingham, K Wheldall and R Beams-Wheldall, 'Why Jaydon can't read: the triumph of ideology over evidence in teaching reading', in 'Policy', Volume 29, Issue 3, 2013, pages 21–32.

[93] H Swanson and R O'Connor, 'The role of working memory and fluency practice on the reading comprehension of students who are dysfluent readers', in 'Journal of Learning Disabilities', Volume 42, Issue 6, 2009, pages 548–575; National Reading Panel (US), 'Teaching children to read: an evidence-based assessment of the scientific research literature on reading and its implications for reading instruction', National Institute of Child Health and Human Development, 2000, pages 3–20.

[94] For example, J Huttenlocher, H Waterfall, M Vasilyeva, J Vevea and L Hedges, 'Sources of variability in children's language growth', in 'Cognitive Psychology', Volume 61, 2010, pages 343–365; J Gilkerson, J A Richards, S F Warren, D Kimbrough Oller, R Russo and B Vohr, 'Language experience in the second year of life and language outcomes in late childhood', in 'Paediatrics', Volume 142, Issue 4, 2018; http://pediatrics.aappublications.org/content/142/4/e20174276.full.

[95] For example, B Hart and T R Risley, 'Meaningful differences in the everyday experience of young American children', Paul H Brookes Publishing, 1995; D E Sperry, L L Sperry and P J Miller, 'Reexamining

recent study surveying teachers in English schools,[96] suggest a strong relationship between vocabulary and social background, in addition to finding similar differences related to other communication and language skills, such as turn-taking during talk.[97]

Schooling is central to increasing pupils' vocabulary, as up to 90% of vocabulary is encountered in reading and not in everyday speech. Vocabulary is particularly important to text comprehension, as children's books tend to deploy far less common vocabulary than is found in day-to-day speech.[98] However, fiction often does not give access to the more academic vocabulary used for high-level GCSE, A level and beyond. It is therefore concerning that evidence suggests that, while in primary school pupils tend to read books appropriate for their age, this is often not the case in secondary school. Boys in particular tend to read material appropriate for those below their chronological age. Non-fiction texts appear most likely to use overly simple language, and on average are two years behind readers' chronological age.[99]

In addition to explicit vocabulary instruction, there is clear evidence that teachers can support comprehension by modelling how expert readers read actively, including by monitoring their understanding, asking questions, making predictions and summarising.[100] However, it important to note that the effects of any type of strategy instruction will be limited if pupils lack the requisite vocabulary or background knowledge to engage with a text.[101]

Another central, but often underestimated, aspect of reading comprehension is prior knowledge about the topic of the reading. The more knowledge readers have about the topic of a text, the better they will understand it.[102] This may appear just common sense, but in some cases educators have focused on developing generic reading

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the verbal environments of children from different socioeconomic backgrounds', in 'Child Development', 2018; doi: 10.1111/cdev.13072, Epub ahead of print.

[96] 'Closing the word gap', Oxford University Press, April 2018; https://global.oup.com/news-items/archive/word_gap1?cc=us.

[97] R R Romeo, J A Leonard, S T Robinson, M R West, A P Mackey, M L Rowe and J D E Gabrieli, 'Beyond the 30-million-word gap: children's conversational exposure is associated with language-related brain function', in 'Psychological Science', Volume 29, Issue 5, 2018, pages 700–710.

[98] C E Snow, M S Burns and P Griffin 'Preventing reading difficulties in young children', National Academy Press, 1998; K E Stanovich, 'Does reading make you smarter? Literacy and the development of verbal intelligence', in 'Advances in child development and behavior', edited by H Reese, Academic Press, 1993, pages 133–180.

[99] K Topping, 'What kids are reading', Renaissance, 2018; https://www.whatkidsarereading.co.uk.

[100] B Rosenshine, 'The case for explicit, teacher-led, cognitive strategy instruction', paper presented at the annual meeting of the American Educational Research Association, Chicago, 24–28 March 1997; J Oakhill, K Cain and C Elbro, 'Understanding and teaching reading comprehension: a handbook', Routledge, 2014; D S Davis, 'A meta-analysis of comprehension strategy instruction for upper elementary and middle school students', 2010; M Stuart and R Stainthorp, 'Reading development and teaching', Sage, 2015.

[101] Education Endowment Foundation, 'Metacognition and self-regulated learning guidance report', 2018; https://educationendowmentfoundation.org.uk/tools/guidance-reports/.

[102] D Willingham, 'When can you trust the experts: how to tell good science from bad in education', Jossey-Bass, 2012; M Lipson and D Cooper, 'Understanding and supporting comprehension development in the elementary and middle grades', in 'Current Research in Reading and Language Arts', 2002; https://www.eduplace.com/state/author/lip_coop.pdf.

comprehension strategies rather than the subject knowledge required for understanding.

2. Behaviour and attitudes

EIF grade criteria:

- The provider has high expectations for learners' behaviour and conduct and applies these expectations consistently and fairly. This is reflected in learners' behaviour and conduct.
- Learners' attitudes to their education or training are positive. They are ommitted to their learning, know how to study effectively, are resilient to setbacks and take pride in their achievements.
- Learners have high attendance and are punctual.
- Relationships among learners and staff reflect a positive and respectful culture. Learners feel safe and do not experience bullying or discrimination.

Research on high expectations and creating a positive culture

High expectations and a positive climate characterised by respectful interactions are two strongly supported elements of educational effectiveness. The importance of expectations is demonstrated most forcefully by the Rosenthal and Jacobson study 'Pygmalion in the classroom', conducted in the 1960s, in which teachers' expectations were experimentally manipulated.[103] At the start of the school year, teachers were provided with a list of pupils who were said to be expected to bloom intellectually in the coming years on the basis of a test, but who in fact did not differ from their peers at baseline. Pupils were retested on three occasions during that school year and during the following year. Results indicated that 'bloomers' gained more in IQ than did control group children. The effect then wore off among the younger subjects, but grew in strength among older pupils. Grades in reading ability also improved significantly among the experimental group children, who were also rated more positively by their teachers on factors such as intellectual curiosity. Since then, the effect has received considerable empirical support, although the ethical problems with Rosenthal and Jacobson's research mean that the actual study has not recently been replicated.[104]

[103] R Rosenthal and L Jacobson, 'Pygmalion in the classroom. Teacher expectations and pupils' intellectual growth', Holt, Rinehart and Winston, 1968.
[104] M C Covington and R G Beery, 'Self-worth and school learning', Holt, Rinehart and Winston, 1976; P Mortimore, P Sammons, L Stoll, D Lewis and R Ecob, 'School matters', Open Books, 1998; D Reynolds, C Teddlie and C Chapman, 'School improvement and system reform', in 'Routledge international handbook of educational effectiveness and improvement research', edited by C Chapman, D Muijs, D Reynolds, P Sammons and C Teddlie, Routledge, 2015; M Kierein and M Gold, 'Pygmalion in work organizations: a meta-analysis', in 'Journal of Organizational Behavior', Volume 21, Issue 8, 2000, pages 913–928.

Expectations have been found to be related to pupils' ethnic, gender and background characteristics.[105] These expectations can affect pupils in a variety of (often subtle) ways. Teachers communicate their expectations to them through:

- verbalisations
- paying closer attention to high-expectancy pupils
- spending more time with them
- failing to give feedback to responses from low-expectancy pupils
- criticising low-expectancy pupils more often
- not waiting as long for the answers of low-expectancy pupils
- calling on them less frequently to answer questions
- asking them only lower-order questions
- giving them more seatwork (for example, completing worksheets) and low-level academic tasks
- leaving them out of some learning activities.[106]

Although very important, high expectations are not always easy to create in an often data-driven culture, in that teachers may interpret data in a deterministic way that suggests to them that, given a particular baseline, the child is not likely to achieve highly. As mentioned above, there may also be stereotypical expectations of particular groups. Ways to help alleviate these issues may include a sensitive and informed approach to data use, combatting stereotyping through exemplars and being aware of unconscious bias. Expectations need to be embodied by staff in their day-to-day interactions with pupils and in the way they conduct themselves in and outside of school. All pupils should be held to high standards of behaviour. It is important to remember that expectancy effects can manifest themselves through allowing pupils of whom the teacher has low expectations to behave worse and be off task more often than high-expectancy pupils, and through giving them more punishments and fewer rewards than are given to high-expectancy pupils. In a high-expectancy culture, school leaders emphasise that all pupils can learn and communicate that belief to pupils and staff. Teachers are aware of how often they call on different pupils and what tasks they give them.[107]

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[105] W C Liu and C K J Wang, 'Home environment and classroom climate: an investigation of their relation to students' academic self-concept in a streamed setting', in 'Current Psychology', Volume 27, Issue 4, 2008, pages 242–256; S Ross and J Jackson, 'Teachers' expectations for black males' and black females' academic achievement', in 'Personality and Social Psychology Bulletin', Volume 17, Issue 1, 1991, pages 78–82.

[106] J Brophy and T L Good, 'Teacher behavior and student achievement', in 'Handbook of Research on Teaching', 3rd edition, edited by M C Wittrock, MacMillan, 1986, pages 328–375.

[107] D Muijs, A Harris, C Chapman, L Stoll and J Russ, 'Improving schools in socio-economically disadvantaged areas: an overview of research', in 'School Effectiveness and School Improvement', Volume 15, Issue 2, 2004, pages 149–176; B P M Creemers and L Kyriakides, 'The dynamics of educational effectiveness: a contribution to policy, practice and theory in contemporary schools', Routledge, 2008.

A positive culture also means creating a positive and empathic environment, in which staff know and care about pupils, and share their vision of the goals of the organisation and of the means of achieving these goals.[108]

Research on attendance and attainment

There is a clear link between attendance and attainment. Research by the DfE, for example, shows that, in 2013/14, while 51.5% of pupils with no absences reached level 5 or above at key stage 2 (at the time of the study, a measure suggesting that pupils were achieving above expectations in English and mathematics), this declined to 25.7% among pupils who missed more than 10% to 15% of lessons. Similarly, at key stage 4 there was a linear decline from 78.4% of no-absence pupils attaining five or more A* to C grades to 35.6% attaining this among pupils with 10% to 15% absence. When the researchers controlled for key pupil characteristics such as prior attainment, SEND, free school meal (FSM) eligibility and gender, the relationship was weaker but still statistically significant. For pupils with the same prior attainment and background characteristics, there was a reduction of around 1.8% in the likelihood of achieving five A* to C grades at GCSE, and a reduction of around 2.1% in the likelihood of achieving the EBacc for each one-session increase in overall absence across key stage 4. At key stage 2, there was a weaker but still significant decrease in the likelihood of reaching level 4 and above of 0.2%, and of reaching level 5 and above of 0.4% among pupils with high levels of absence.[109]

In terms of ways of improving attendance, the strongest evidence appears to be around providing clear pathways from education to next steps such as higher education or employment and providing a high-quality curriculum and teaching experience. There is a relationship between increased temporary drop-out from, and poor behaviour in, class and subsequent chronic non-attendance, so early identification of pupils and targeted intervention may be helpful, though the evidence is rather mixed.[110] Work with parents is particularly helpful in primary and early years.[111] In further education, early identification of poor attenders and those disengaged in class, high-quality teaching, and a whole-provider ethos and focus on attendance have been found to be effective strategies.[112]

As well as attendance, time on task is a key predictor of attainment (as mentioned in the section on effective teaching). Time on task is maximised by ensuring that lesson

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[108] P den Brok, M Brekelmans and T Wubbels, 'Interpersonal teacher behaviour and student outcomes', in 'School Effectiveness and School Improvement', Volume 15, Issue 4, 2004, pages 407–422.
[109] 'The link between absence and attainment at key stage 2 and key stage 4: 2013 to 2014 academic year', Department for Education, March 2016; https://www.gov.uk/government/publications/absence-and-attainment-at-key-stages-2-and-4-2013-to-2014.
[110] 'Preventing dropout in secondary schools', Institute for Education Sciences, September 2017; https://ies.ed.gov/ncee/wwc/PracticeGuide/24.
[111] C Taylor, 'Improving attendance at school', Department for Education, 2012.
[112] 'Improving attendance and punctuality', Ofsted, 2013; https://www.gov.uk/government/publications/improving-attendance-and-punctuality.

time is fully used for teaching, and that during that time pupils are on task.[113] To ensure the former, punctuality is important. While little data exists, one methodologically strong study using a longitudinal dataset for primary school pupils in Philadelphia shows not only that tardiness has a negative impact on the attainment of the tardy pupil, but also that there is an overall effect of peer tardiness on the attainment of pupils in the class.[114]

Research on behaviour and attainment

Behaviour is obviously crucial to maximising time on task, and to minimising bullying and violent behaviour outside as well as inside the classroom. Creating a sufficiently disciplined environment in **school** and classroom is a prerequisite to any learning taking place. This is not primarily an individual classroom issue, however, but a whole-school one, as consistency and ensuring that the school supports teachers who follow its policies are crucial to effective behaviour management. Behaviour policies need to be set for all aspects of school life, not just classroom practice, and increasingly need to cover certain types of behaviours outside of school, such as interaction on social media[115] as this often spills over into school life. Good whole-school behaviour management policies provide a clear framework of policies and procedures that need to be rigorously applied; they include attention to school culture, leadership, and pupil and teacher behaviours.[116] Implementation that includes clear leadership support for teachers and buy-in from key stakeholders is essential to making whole-school behaviour policies work.[117]

The importance of consistency

For behaviour management, as much as for effective teaching, consistency is vital. Consistency across practices is important for pupils, who benefit from clear expectations of what is typically going to happen in lessons and of what is expected of them behaviourally. One of the reasons for this is that young people, in particular

[113] D Muijs, L Kyriakides, G van der Werf, B Creemers, H Timperley and L Earl, 'State of the art – teacher effectiveness and professional learning', in 'School Effectiveness and School Improvement', Volume 25, Issue 2, 2014, pages 231–256.

[114] M Gottfried, 'The achievement effects of tardy classmates: evidence in urban elementary schools', in 'School Effectiveness and School Improvement', Volume 25, Issue 1, 2014, pages 3–28.

[115] D Reynolds, C Teddlie and C Chapman, 'School improvement and system reform', in 'Routledge international handbook of educational effectiveness and improvement research', edited by C Chapman, D Muijs, D Reynolds, P Sammons and C Teddlie, Routledge, 2015; W Doyle, 'Classroom organization and management', in 'Handbook of research on teaching', 3rd edition, edited by M C Wittrock, Macmillan, 1986; L Kyriakides, B P M Creemers, D Papastylianou and M Papadatou-Pastou, 'Improving the school learning environment to reduce bullying: an experimental study',
in 'Scandinavian Journal of Educational Research', Volume 58, Issue 4, 2014, pages 453–478.

[116] J D Nobile, T London and M E Baba, 'Whole school behaviour management and perceptions of behaviour problems in Australian primary schools', in 'Management in Education', Volume 29, Issue 4, 2015, pages 164–171.

[117] G Sugai, H Horner, G Dunlap, M Hieneman, T J Lewis, C M Nelson and T Scott, 'Applying positive behavior support and functional behavioral assessment in schools', in 'Journal of Positive Behavior Interventions', Volume 2, Issue 3, 2000, pages 131–143.

adolescents, are developmentally attuned to concepts of fairness that may be challenged by differential treatment by different teachers or of different pupils.[118]

Behaviour norms need to be set at the start of school attendance and reinforced frequently. Some secondary schools are using intensive programmes that aim to instil behaviour expectations in pupils before they start school. While more evaluations of such approaches would be valuable, there is evidence that confusion about standards is likely to lead to worse behaviour.[119] Involving pupils in setting rules can enhance ownership and thus buy-in, and typically does not result in less stringency as sometimes feared.[120]

Consistency in terms of behavioural expectations is also important in **early years** settings. Young children benefit from a warm and empathic but also rule-based environment. Developing self-regulation and the ability to follow direction are important elements of early child development and are assisted by an environment in which clear rules are consistently enforced. There is evidence that clear discipline and behaviour policies that prioritise talking through conflicts characterises effective behaviour management in early years settings.[121] In their study of effective pedagogy in early years, Siraj-Blatchford and others found that in less effective settings there was often no follow up on children's misbehaviour.

Children were instead 'distracted' from interfering with other children, or simply instructed to stop.

Different approaches to managing behaviour

A range of different behaviour management models exist, from 'no excuses'/'zero tolerance' systems in which all behaviour transgressions are immediately dealt with, on the principle that not doing so may lead to escalation and a culture of uncertainty and freedom from consequences, to systems that recommend ignoring minor misdemeanours, as constantly dealing with misbehaviour may reduce effective learning time.[122] Evidence of the relative effectiveness of these different approaches is currently inconclusive, and likely to depend on context, although there is some, albeit limited,

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[118] E A Crone, 'Considerations of fairness in the adolescent brain', in 'Child Development Perspectives', Volume 7, Issue 2, 2013, pages 97–103; B Güroğlu, W van den Bos and E Crone, 'Fairness considerations: increasing understanding of intentionality during adolescence', in 'Journal of Experimental Child Psychology', Volume 104, Issue 4, 2009, pages 398–409.
[119] J K Luiselli, R F Putnam, R W Handler and A B Feinberg, 'Whole-school positive behaviour support: effects on student discipline problems and academic performance', in 'Educational Psychology: An International Journal of Experimental Educational Psychology', Volume 25, Issues 2–3, 2005, pages 183–198.
[120] J Rudduck and J Flutter, 'How to improve your school', Continuum, 2003; R Coe, C Aloisi, S Higgins and L Elliott-Major, 'What makes great teaching. Review of the underpinning research', CEM Centre, 2014.
[121] I Siraj-Blatchford, K Sylva, S Muttock, R Gilden and D Bell, 'Researching effective pedagogy in the early years', Department for Education and Skills, 2002.
[122] R I Arends, 'Learning to teach', McGraw-Hill, 1998.

evidence of a positive relationship between zero tolerance approaches and attainment.[123]

For a 2017 DfE study, a number of English schools were visited, which were identified as having very effective behaviour management or had shown rapidly improving pupil behaviour.[124] The study involved interviews with practitioners, advisory panel round-table discussions with experts and 20 independent case studies. This study identified the following features as contributors towards effective behaviour management in schools:

- committed, highly visible school leaders, with ambitious goals, supported by a strong leadership team

- effectively communicated, realistic and detailed expectations understood clearly by all members of the school

- highly consistent working practices throughout the school

- a clear understanding of what the school culture is and what values the school holds

- high levels of staff and parental commitment to the school's vision and strategies

- high levels of support between leadership and staff, for example in staff training

- attention to detail and thoroughness in the execution of school policies and strategies

- high expectations of all students and staff, and a belief that all students matter equally.[125]

In light of the relatively limited evidence base on managing behaviour in England, Ofsted has carried out a research study on this topic, the findings of which will be reported in early 2019.

Use of exclusions is an essential part of behaviour management systems, used as a last resort when behaviour becomes unmanageable, misbehaviour is persistent, or behaviour is threatening the safety of other pupils or adults in the school. While exclusions in England have been rising over recent years, they are historically still relatively low compared to rates from the mid-1990s up to the mid-2000s.[126] They are,

[123] S Krowka, A Hadd and R Marx, '"No excuses" charter schools for increasing math and literacy achievement in primary and secondary education', Campbell Collaboration, 2017.
[124] T Bennett, 'Creating a culture: how school leaders can optimise behaviour: independent review of behaviour in schools', Department for Education, 2017.
[125] T Bennett, 'Creating a culture: how school leaders can optimise behaviour: independent review of behaviour in schools', Department for Education, 2017, page 7.
[126] 'A profile of pupil exclusions in England', Department for Education, February 2012; https://www.gov.uk/government/publications/a-profile-of-pupil-exclusions-in-england; 'Permanent and fixed-period exclusions in England: 2015 to 2016', Department for Education, 2017;

however, significantly higher than in the rest of the UK nations.[127] The impact of exclusions on the excluded pupil can be negative, and some studies report correlations with mental health issues, lower rates of future involvement in education, employment and training, and offending.[128] Excluded pupils are more likely to be boys, eligible for FSM and with SEND.[129]

Research on bullying and discrimination

Bullying and discrimination remain persistent and worrying phenomena in and outside of schools. While there is no convincing evidence that the overall prevalence of bullying is increasing, there is also little evidence of a decrease, notwithstanding the range of initiatives that have sought to address it.[130] Bullying can target 'protected characteristics', such as race, religion or sexual orientation, and has been found to particularly affect pupils with protected characteristics.[131]

While obviously a major issue in itself, there is also evidence that bullying can have a negative impact on pupil attainment, and that reducing bullying can be associated with improved attainment.[132] There is increasing evidence that **schools** can and do have an impact on the prevalence of bullying. Although the number of studies is still limited, international evidence suggests that schools may explain at least some of the variance in prevalence rates of bullying.[133] In a recent study of primary schools in England, 17%

https://www.gov.uk/government/statistics/permanent-and-fixed-period-exclusions-in-england-2015-to-2016.

[127] J Evans, 'Not present and not correct: understanding and preventing school exclusions', Barnardo's, 2010.

[128] M T Ford, B A Heinen and K L Langkamer, 'Work and family satisfaction and conflict: a meta-analysis of cross-domain relations', in 'Journal of Applied Psychology', Volume 92, 2007, pages 57–80; H Daniels, 'Exclusion from school and its consequences', in 'Social Psychology and Society', Volume 9, Issue 3, 2018; J Sanders, L Liebenberg and R Munford, 'The impact of school exclusion on later justice system involvement: investigating the experiences of male and female students', in 'Educational Review', 2018; https://www.tandfonline.com/doi/abs/10.1080/00131911.2018.1513909; C Hayden, 'Responding to exclusion from school in England', in 'Journal of Educational Administration', 2003, pages 626–639.

[129] 'Mental health and behaviour in schools', Department for Education, November 2018; https://www.gov.uk/government/publications/mental-health-and-behaviour-in-schools--2.

[130] P K Smith, 'Understanding school bullying. Its nature and prevention strategies', Sage, 2015.

[131] E O'Malley Olsen, L Kann, A Vivolo-Kantor, S Kinchen and T Mcmanus, 'School violence and bullying among sexual minority high school students, 2009–2011', in 'Journal of Adolescent Health', Volume 55, Issue 3, 2014, pages 432–438; A Connell, D Farrington and J Ireland, 'Characteristics of bullies and victims among incarcerated male young offenders', in 'Journal of Aggression, Conflict and Peace Research', Volume 8, Issue 2, 2016, pages 114–123; T G Scherr and J Larson, 'Bullying dynamics associated with race, ethnicity, and immigration status', in 'Handbook of bullying in schools. An international perspective', edited by S R Jimerson, S M Swearer and D Espelage, Routledge, 2010, pages 223–234; S Brown and K Taylor, 'Bullying, education and earnings: evidence from the National Child Development Study', in 'Economics of Education Review', Volume 27, Issue 4, 2008, pages 387–401.

[132] S Brown and K Taylor, 'Bullying, education and earnings: evidence from the National Child Development Study', in 'Economics of Education Review', Volume 27, Issue 4, 2008, pages 387–401; P Fonagy, S W Twemlow, E Vernberg, F C Sacco and T D Little, 'Creating a peaceful school learning environment: the impact of an antibullying program on educational attainment in elementary schools', in 'Medical Science Monitor', Volume 11, Issue 3, 2005, pages 317–325.

[133] B Galand, V Hospel and N Baudoin, 'Prévenir le harcèlement via les pratiques de classe? Une étude multiniveaux' (trans: 'Bullying prevention through classroom practices? A multilevel analysis'), in 'Revue

of the variance in bullying prevalence was explained by differences between schools.[134] There is also significant evidence that some school-level interventions have had a significant impact on reducing the prevalence of bullying.[135]

In terms of the school and classroom factors that contribute to differences in levels of bullying, research suggests that physical characteristics such as school and class size are less significant than is often suggested, while intake characteristics and attainment are significant in some, but not other, studies.[136] The main factors related to prevalence of bullying appear to be associated with school and classroom culture. Cook and others, in their meta-analysis, suggest that bullying is more prevalent in 'schools with a negative atmosphere', while a recent large-scale study in Colorado found perceptions of a negative school climate measured at 'time 1' to be significantly related to self-reported bullying perpetration one year later ('time 2'), controlling for time 1 bullying.[137] Kyriakides and Creemers found that teacher–student relationships, policies for behaviour outside the classroom (for example, fighting in the playground), partnerships between school and parents, and evaluation of the quality of the school learning environment are significantly related to lower levels of bullying.[138] In a study of UK primary schools, levels of bullying were found to be lower in schools that have created an environment in which equality of opportunity and social cohesion (the willingness of pupils from different backgrounds to cooperate with each other) are strong. Consistent implementation, evaluation and adaptation of policies, and recording of incidents are also related to lower prevalence of bullying.[139]

Québécoise de Psychologie', Volume 35, Issue 3, 2014, pages 137–156; L Kyriakides and B P M Creemers, 'Characteristics of effective schools in facing and reducing bullying', in 'School Psychology International', Volume 34, Issue 4, 2013, pages 348–368.

[134] D Muijs, 'Can schools reduce bullying? The relationship between school characteristics and the prevalence of bullying behaviours', 'British Journal of Educational Psychology', Volume 87, Issue 2, 2017, pages 255–272.

[135] M Ttofi and D Farrington, 'Effectiveness of school-based programs to reduce bullying: a systematic and meta-analytic review', in 'Journal of Experimental Criminology', Volume 7, Issue 1, 2011, pages 27–56.

[136] S M Swearer, S Y Song, P T Cary, J W Eagle and W T Mickelson, 'Psychosocial correlates in bullying and victimization: the relationship between depression, anxiety, and bully/victim status', in 'Bullying behavior: current issues, research, and interventions', edited by R A Geffner, M Loring and C Young, Haworth Press, 2010, pages 95–121; B Galand, V Hospel and N Baudoin, 'Prévenir le harcèlement via les pratiques de classe? Une étude multiniveaux' (trans: 'Bullying prevention through classroom practices? A multilevel analysis'), in 'Revue Québécoise de Psychologie', Volume 35, Issue 3, 2014, pages 137–156.

[137] C R Cook, K R Williams, N G Guerra, T E Kim and S Sadek, 'Predictors of bullying and victimization in childhood and adolescence: a meta-analytic investigation', in 'School Psychology Quarterly', Volume 25, Issue 2, 2010, pages 65–83; B P Gendron, K R Williams and N G Guerra, 'An analysis of bullying among students within schools: estimating the effects of individual normative beliefs, self-esteem, and school climate', in 'Journal of School Violence', Volume 10, Issue 2, 2011, pages 150–164.

[138] L Kyriakides and B P M Creemers, 'Characteristics of effective schools in facing and reducing bullying', in 'School Psychology International', Volume 34, Issue 4, 2013, pages 348–368.

[139] D Muijs, 'Can schools reduce bullying? The relationship between school characteristics and the prevalence of bullying behaviours', 'British Journal of Educational Psychology', Volume 87, Issue 2, 2017, pages 255–272.

3. Personal development

EIF grade criteria:

- The curriculum extends beyond the academic, technical or vocational and provides for learners' broader development, enabling them to develop and discover their interests and talents.

- The curriculum and the provider's wider work support learners to develop their character – including their resilience, confidence and independence – and help them know how to keep physically and mentally healthy.

- At each stage of education, the provider prepares learners for future success in their next steps.

- The provider prepares learners for life in modern Britain by: equipping them to be responsible, respectful, active citizens who contribute positively to society; developing their understanding of fundamental British values; developing their understanding and appreciation of diversity; celebrating what we have in common and promoting respect for the different protected characteristics as defined in law.

Character, resilience and British values such as tolerance are important characteristics, which we want to develop in children and young people. Education should help prepare learners to lead ethical, productive and fulfilling lives and to contribute positively to society.

Research on self-belief, resilience and character

Self-belief, an overarching term for a set of often overlapping and highly correlated concepts such as self-confidence, self-concept and self-efficacy, has been found to be slightly but significantly related to subsequent attainment,[140] while, conversely, there is a significant effect of attainment on self-belief, and the latter effect is typically stronger than the former.[141] There is also evidence of a significant if not particularly strong effect of school on self-belief.[142] This raises the question of what educators can do to enhance learners' self-confidence and self-belief. There are, of course, a number of interventions in existence, supported by varying levels of evidence, but, in terms of

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[140] J Valentine, D DuBois and H Cooper, 'The relation between self-beliefs and academic achievement: a meta-analytic review', in 'Educational Psychologist', Volume 39, Issue 2, 2004, pages 111–133.
[141] H W Marsh and A J Martin, 'Academic self-concept and academic achievement: relations and causal ordering', in 'British Journal of Educational Psychology', Volume 81, 2011, pages 59–77; M Pinxten, B De Fraine, J Van Damme and E D'Haenens, 'Student achievement and academic self-concept among secondary students in Flanders: gender and changes over time', in 'Irish Educational Studies', Volume 32, Issue 2, 2013, pages 157–178; D Muijs, 'Predictors of academic achievement and academic self-concept: a longitudinal perspective', in 'British Journal of Educational Psychology', Volume 67, 1997, pages 263–277.
[142] For example, E Van de Gaer, B De Fraine, H Putjens, J Van Damme, A De Munter and P Onghena, 'School effects on the development of motivation toward learning tasks and the development of academic self-concept in secondary education: a multivariate latent growth curve approach', in 'School Effectiveness and School Improvement', Volume 20, Issue 2, 2009, pages 235–253.

what factors in the day-to-day life of a provider can make a difference, it is again the case that the main factor seems to be climate. Creating a supportive environment with clear boundaries is particularly important. This means that, while supportive and caring, schools, for example, should also be disciplined, orderly environments with clear, though not stifling, rules and procedures.[143] There are clear benefits to providing pupils with responsibilities and roles through which they can develop self-confidence. Expectations, as mentioned in the section on effective teaching, can also affect self-belief.[144] However, as the impact of achievement on belief appears stronger than the reverse, the key to promoting positive self-belief is to ensure that pupils experience successful learning in school.

Resilience, alongside its related concept, 'grit', has become a popular concept in education over recent years. In general, resilience is about adjusting to adversity when it happens and bouncing back afterwards. It has been defined as: 'The process of effectively negotiating, adapting to sources of stress, or managing significant sources of stress or trauma'.[145] There is general agreement that resilience is both a **trait**, such as a relatively stable aspect of personality, and a **dynamic process**, such as a personal behaviour that changes over time and therefore can be influenced by training and development.[146] Resilience develops through interaction between the person and the environment.[147] It is closely related to a range of other concepts in mental health and well-being. In education, the term 'resilience' has been used in a number of ways. 'Academic resilience' is typically used to refer to the extent to which pupils recover from setbacks in attainment, or overcome disadvantages of low prior attainment or social background.[148] 'Resilience' is also used in the broader sense defined above, however, either to refer to children who have overcome a non-school-related trauma,[149] or more generally as a life disposition that can in part be developed through education.[150] There is evidence that resilience, along with optimism and self-control,

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[143] D Muijs and D Reynolds, 'Effective teaching, evidence and practice', 4th edition, Sage, 2017.
[144] C Podesta, 'Self-esteem and the 6-second secret', updated edition, Corwin Press, 2001.
[145] C Rook, L Smith, J Johnstone, C Rossato, G Lopez Sanches, A Suarez and J Roberts, 'Reconceptualising workplace resilience – a cross-disciplinary perspective', in 'Anales de Psycologia', Volume 34, Issue 2, 2018, pages 332–339; G Windle, 'What is resilience? A review and concept analysis', in 'Review in Clinical Gerontology', Volume 21, 2011, pages 152–169.
[146] A Chmitorz, A Kunzler, I Helmreich, O Tüscher, R Kalisch, T Kubiak, M Wessa and K Lieb, 'Intervention studies to foster resilience – a systematic review and proposal for a resilience framework in future intervention studies', in 'Clinical Psychology Review', Volume 59, 2018, pages 78–100; G Windle, 'What is resilience? A review and concept analysis', in 'Review in Clinical Gerontology', Volume 21, 2011, pages 152–169.
[147] S Beltman, C Mansfield and A Price, 'Thriving, not just surviving: a review of research on teacher resilience', in 'Educational Research Review', Volume 6, Issue 3, 2011, pages 185–207.
[148] For example, G Borman and L Rachuba, 'Academic success among poor and minority students: an analysis of competing models of school effects', Office of Educational Research and Improvement, 2001.
[149] For example, A Masten, N Garmezy, A Tellegen, D Pellegrini, K Larkin and A Larsen, 'Competence and stress in school children: the moderating effects of individual and family qualities', in 'Journal of Child Psychology and Psychiatry', Volume 29, Issue 6, 1988, pages 745–764.
[150] For example, C Olsson, L Bond, J Burns, D Vella-Brodrick and S Sawyer, 'Adolescent resilience: a concept analysis', in 'Journal of Adolescence', Volume 26, Issue 1, 2003, pages 1–11.

can help explain why some pupils from highly disadvantaged backgrounds do better in terms of educational and life outcomes than others from the same background.[151]

Research on resilience as overcoming non-school-related trauma typically focuses on specific interventions in high-trauma contexts.[152] In terms of academic resilience, evidence again supports climate-based models over the effect of peers or the more traditional school effectiveness factors. Caring and supportive teachers, a safe and orderly school environment, high expectations, opportunities for pupils to become involved in the life of the school, and good relationships between school and parents appear to be part of a 'community'-oriented climate that can foster academic resilience, in particular among disadvantaged pupils.[153]

Most recent interest has been on the extent to which **schools** can foster resilience as a disposition. Here there is, however, relatively limited evidence of a school effect, with school factors explaining 3% of the variance in resilience between pupils in one of the few studies to have looked at this.[154] The school factors that seem to make a difference within this limited amount of variance are ensuring that pupils achieve academically, or in areas such as sports or arts.[155] A supportive climate, good relationships between school and parents and a whole-school approach to tackling physical and mental health (see below) have also been advocated as promoting resilience, although the evidence for this is modest.[156]

In **early years**, resilience is often linked to competence and the development of positive relations with adults and peers. Parenting is seen as key, but early years settings can contribute to the development of resilience through creating opportunities for the development of positive relations with peers and the creation of a warm but rule-governed structure.[157]

Resilience is sometimes discussed alongside the concept of character. As with resilience, there are definitional challenges with this term, and research in this area can explore a wide range of outcomes.[158] The evidence base in this area is underdeveloped. However, intentionally investing in character education using a whole-

[151] P Tough, 'How children succeed: grit, curiosity, and the hidden power of character', Houghton Mifflin Harcourt, 2012.

[152] For example, in the context of schools experiencing high levels of AIDS/HIV, L Ebersöhn and R Ferreira, 'Coping in an HIV/AIDS-dominated context: teachers promoting resilience in schools', in 'Health Education Research', Volume 26, Issue 4, 2011, pages 596–613.

[153] G Borman and L Rachuba, 'Academic success among poor and minority students: an analysis of competing models of school effects', Office of Educational Research and Improvement, 2001.

[154] L Gutman and L Feinstein, 'Children's wellbeing in primary school: pupil and school effects', Centre for Research on the Wider Benefits of Learning, 2008.

[155] M Hill, A Stafford, P Seaman, N Ross and B Daniel, 'Parenting and resilience', Joseph Rowntree Foundation, 2007; https://www.jrf.org.uk/sites/files/jrf/parenting-resilience-children.pdf.

[156] 'Building children and young people's resilience in schools', Public Health England, 2014.

[157] A Masten and J D Coatsworth, 'The development of competence in favorable and unfavorable environments', in 'American Psychologist', Volume 53, Issue 2, 1998, pages 205–220.

[158] L Gutman and I Schoon, 'The impact of non-cognitive skills on the outcomes of young people', 2013; https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Lit_Review_Non-CognitiveSkills.pdf.

school approach, modelling desired behaviours at both school and teacher level, integrating character development with a strong curriculum rather than doing this as a standalone separate activity, developing pupils' intrinsic motivation, shared core values and positive relationships have been posited as key ways in which schools can develop pupils' character.[159]

Research on physical and mental health

There is little research on the effects of schools or other settings on **physical health**, although there are a number of intervention studies. There is existing evidence that **schools** vary in their pupils' use of drugs and smoking. Differences between schools in this respect tend to be related to pupil intake characteristics and school culture.[160] In a longitudinal study of Scottish pupils who were followed from the end of primary school (age 11) to age 16, West and others found that the school attended explains the difference between 2% (drugs in primary schools) and 7% (healthy diet in secondary schools) of the variance in four health outcomes (drug use, drinking, smoking, healthy diet).[161] The main school-level predictors of health outcomes are pupils' levels of engagement with education and the perceived quality of pupil–parent relationships. In our own study on obesity in primary schools, we found a relative lack of variance in practices between primary schools, which results in limited differences between schools.[162]

In terms of promoting healthy behaviours, holistic whole-school interventions focusing on including healthy behaviours in the curriculum, providing a healthy and safe environment, and involving health services and the community, are most likely to have a positive impact on health outcomes, although effects tend to be small.[163] Ofsted's study on obesity in primary schools identified that individual schools can have little impact on children's levels of obesity. That said, it suggests that it is right for schools to focus on those things they do well, such as:

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[159] T Lickona, E Schaps and C Lewis, 'Eleven principles of effective character education', in 'Special Topics, General', 50, 2002; https://digitalcommons.unomaha.edu/slcestgen/50; M W Berkowitz, M C Bier and B McCauley, 'Effective features and practices that support character development'. Paper presented at The National Academies of Sciences, Engineering, and Medicine Workshop on Approaches to the Development of Character, Washington DC, 2016.
[160] P Aveyard, W A Markham, E Lancashire, A Bullock, C MacArthur, K K Cheng and H Daniels, 'The influence of school culture on smoking among pupils', in 'Social Science and Medicine', Volume 58, Issue 9, 2004, pages 1767–1780.
[161] P West, H Sweeting and A Leyland, 'School effects on pupils' health behaviours: evidence in support of the health promoting school', in 'Research Papers in Education', Volume 19, Issue 3, 2004, pages 261–291.
[162] 'Obesity, healthy eating and physical activity in primary schools. A thematic review into what actions schools are taking to reduce childhood obesity', Ofsted, July 2018; https://www.gov.uk/government/publications/obesity-healthy-eating-and-physical-activity-in-primary-schools.
[163] R Langford, C Bonell, H Jones, T Pouliou, S Murphy, E Waters, K Komro, L Gibbs, D Magnus and R Campbell, 'The WHO health promoting school framework for improving the health and well-being of students and their academic achievement', in 'Cochrane Database of Systematic Reviews 2014', Volume 4, Article CD008958, 2014.

- planning a challenging and well-sequenced curriculum, including learning about the body in physical education (PE), and about healthy eating and cooking in science

- providing opportunities for children to take physical exercise during the school day, including lots of opportunities to 'get out of breath'

- teaching particular skills like how to cook or how to dance

- updating parents on their children's physical development, such as agility, balance and coordination.[164]

School effects on **mental health** have been widely argued, but there is far less empirical research on whether the school attended makes a difference to the mental health of pupils. In their study of school and classroom effects on mental health in Sweden, Modin and Ostberg found that school and classroom explain around 2.5% of variance.[165] The main factor that predicts different school-level effects is school climate, measured through variables such as pupils' opinions being taken seriously, pupils getting help from teachers, and teaching being interesting (as reported by pupils). Schochet and others meanwhile found a significant relationship between adolescents' feelings of belonging in school and their mental health.[166] A recent study of adolescents in 40 secondary schools in England shows that, compared to schools with an excellent Ofsted rating, those rated requires improvement report lower well-being.[167]

In terms of intervention, it would appear that the most effective approaches focus broadly on well-being and promote strengths rather than primarily focusing on poor mental health. A whole-school approach that incorporates these factors in the curriculum as well as targeted support, staff development, working with parents and developing a positive climate, has been found to have a positive effect on both physical and mental health.[168] Again, school climate appears to be the predominant factor, with connectedness to the school, a respectful and warm climate, positive relationships between pupils and teachers and between pupils, consistency and use of routines, and low levels of disruption and conflict found to promote well-being.[169] Early identification

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[164] 'Obesity, healthy eating and physical activity in primary schools. A thematic review into what actions schools are taking to reduce childhood obesity', Ofsted, July 2018; https://www.gov.uk/government/publications/obesity-healthy-eating-and-physical-activity-in-primary-schools.

[165] B Modin and V Östberg, 'School climate and psychosomatic health: a multilevel analysis', in 'School Effectiveness and School Improvement', Volume 20, Issue 4, 2009, pages 433–455.

[166] I M Shochet, M R Dadds, D Ham and R Montague, 'School connectedness is an underemphazised parameter in adolescent mental health: results of a community prediction study', in 'Journal of Clinical Child and Adolescent Psychology', Volume 35, Issue 2, 2006, pages 170–179.

[167] J McGowan, C Bonell, C Allen, E Warren, A Kutty, L Bevilacqua, R Legood, M Wiggins, A Mathiot, A Fletcher, S Scott, D Elbourne, D Christie and R Viner, 'The relationship between school-level factors and adolescent student well-being: cross-sectional findings from the INCLUSIVE trial', in 'Journal of Adolescent Health', Volume 62, Issue 2, Supplement, 2018, pages 14–15.

[168] 'Promoting children and young people's emotional health and wellbeing', Public Health England, 2015.

[169] K Weare and M Nind, 'Mental health promotion and problem prevention in schools: what does the evidence say?', in 'Health Promotion International', Volume 26, Issue 1, 2011, pages 26–69; K Weare, 'What works in promoting social and emotional well-being and responding to mental health problems in

is often seen as crucial,[170] although there is little evidence for the effectiveness of early screening programmes.[171]

No contradiction between a focus on learning and well-being

There is often a tendency to see a focus on well-being as being in contradiction to a focus on the academic curriculum. There is, however, little evidence for this. Certainly, within Western education systems there is limited support of a negative correlation between measures of well-being and a focus on learning in most studies, with either no relationship or a weak positive relationship typically found.[172] It is important in this respect to remember that academic achievement itself can lead to positive socio-emotional outcomes for pupils, such as enhanced self-concept and attitudes to learning.[173]

Research on citizenship

There is a longstanding tradition of research into the relationship between education and **citizenship** – being actively involved in society, and carrying out one's duties and responsibilities as a member of that society – including such factors as attitudes to democracy and tolerance. Generally, this research points to a clear correlation between education, typically defined by highest qualification achieved or number of years spent in education, and attitudes. This is both at the individual and societal levels.[174] When it comes to the actions of individual schools, school and classroom climate appear important. An open school and classroom climate, in which there are opportunities for

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schools?', National Children's Bureau, 2015; M Greenberg and T Jennings, 'The prosocial classroom: teacher social and emotional competence in relation to student and classroom outcomes', in 'Review of Educational Research', Volume 79, Issue 1, 2009, pages 491–525; 'Building children and young people's resilience in schools', Public Health England, 2014.

[170] K Weare and M Nind, 'Mental health promotion and problem prevention in schools: what does the evidence say?', in 'Health Promotion International', Volume 26, Issue 1, 2011, pages 26–69.

[171] J Anderson, T Ford, E Soneson, J Coon, A Humphrey, M Rogers and E Howarth, 'A systematic review of effectiveness and cost-effectiveness of school-based identification of children and young people at risk of, or currently experiencing, mental health difficulties', in 'Psychological Medicine', Volume 49, Issue 1, pages 9–19; https://www.cambridge.org/core/journals/psychological-medicine/article/systematic-review-of-effectiveness-and-costeffectiveness-of-schoolbased-identification-of-children-and-young-people-at-risk-of-or-currently-experiencing-mental-health-difficulties/398772E886954AA3BEC222B972A7AFB5.

[172] M C Opdenakker and J Van Damme, 'Effects of schools, teaching staff and classes on achievement and well-being in secondary education: similarities and differences between school outcomes', in 'School Effectiveness and School Improvement', Volume 11, Issue 2, 2000, pages 165–196; A Vignoles and E Meschi, 'The determinants of non-cognitive and cognitive schooling outcomes', 'CEE special report 4', report to the DCSF, 2010; K Van Petegem, A Aelterman, H Van Keer and Y Rosseel, 'The influence of student characteristics and interpersonal teacher behaviour in the classroom on student's wellbeing', in 'Social Indicators Research', Volume 85, Issue 2, 2008, pages 279–291.

[173] D Muijs, 'Predictors of academic achievement and academic self-concept: a longitudinal perspective', in 'British Journal of Educational Psychology', Volume 67, 1997, pages 263–277; H W Marsh and A J Martin, 'Academic self-concept and academic achievement: relations and causal ordering', in 'British Journal of Educational Psychology', Volume 81, 2011, pages 59–77.

[174] B Hoskins and M Mascherini, 'Measuring active citizenship through the development of a composite indicator', in 'Social Indicators Research', Volume 90, Issue 3, 2009, pages 459–488; B Hoskins, B D'Hombres and J Campbell, 'Does formal education have an impact on active citizenship behavior?', in 'European Educational Research Journal', Volume 7, Issue 3, 2008, pages 386–402.

debate and discussion, matter as much as formal teaching of particular values or political knowledge.[175] In addition, participation in activities (for example, debating societies) and organisations both inside and outside of school offers unique training in civic practices.[176] If these activities and development are to have a positive effect, it is important that they are not limited to pupils studying politics or associated subjects, as sometimes appears to be the case.[177]

In summary

In drawing together research across these aspects of personal development, it appears that it is not so much individual actions of the school, but attention to climate and culture that matter. School climates that are supportive and nurturing, while also promoting discipline and boundaries, and that actively nurture belonging to school and pupil involvement, show widespread benefits. Where specific interventions are adopted, it is important to make sure that they fit the context of the school and are implemented thoroughly, consistently and with fidelity. Interventions most often work if they are implemented in full.[178] Evaluations typically show that well-coordinated whole-school approaches are most likely to have an impact, while uncoordinated small-scale interventions are not. Support from the senior leadership team is essential.[179]

4. Leadership and management

Leadership is the most important school-level factor in most effectiveness studies.[180] While this may seem obvious, for a long period effectiveness research showed a rather mixed picture, as not all studies found an effect of leadership on pupil outcomes. Primarily, this was because direct effect models were used, which suggested that what leaders do has a direct impact on pupil attainment. However, theoretically, leadership does not have this direct effect, but rather helps create the conditions under which

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[175] B Hoskins and M M C Mok, 'Understanding how young people learn political engagement: the relationship between political learning at home and political learning at school in Europe and Asia', at the Fifth Annual Conference on Citizenship Education: Political Participation: Enhancing Competences, 14–15 June 2017, Groningen, the Netherlands.

[176] J Youniss, J A McLellan and M Yates, 'What we know about engendering civic identity', in 'American Behavioral Scientist', Volume 40, Issue 5, 1997, pages 620–631.

[177] L Liu, 'Exploring the relationship between education, economy and individual civic attitudes: a comparison between Western and East-Asian Regimes using multilevel analysis', PhD thesis, University of Southampton, 2017.

[178] K Weare and M Nind, 'Mental health promotion and problem prevention in schools: what does the evidence say?', in 'Health Promotion International', Volume 26, Issue 1, 2011, pages 26–69.

[179] K Weare, 'What works in promoting social and emotional well-being and responding to mental health problems in schools?', National Children's Bureau, 2015; R Banerjee, K Weare and W Farr, 'Working with "Social and Emotional Aspects of Learning", (SEAL): associations with school ethos, pupil social experiences, attendance, and attainment', in 'British Educational Research Journal', Volume 40, Issue 3, 2014, pages 718–742.

[180] D Reynolds, S Sammons, B De Fraine, J Van Damme, T Townsend, C Teddlie and S Stringfield, 'Educational effectiveness research (EER): a state-of-the-art review', in 'School Effectiveness and School Improvement', Volume 25, Issue 2, 2014, pages 197–230; P Sammons, Q Gu, C Day and J Ko, 'Exploring the impact of school leadership on pupil outcomes: results from a study of academically improved and effective schools in England', in 'International Journal of Educational Management', Volume 25, Issue 1, 2011, pages 83–101.

teachers can be optimally effective, which in turn should result in higher levels of pupil performance. This is indeed what most studies that have looked at more subtle and indirect ways of measuring the impact of leadership have found.[181]

School leadership explains 5% to 7% of the variation in pupil attainment, but about one quarter of the variation explained by school factors in total.[182] Leadership effects are primarily indirect, and they appear mainly to work through the organisational variable of school mission or goals and through variables related to curriculum and instruction.[183]

There is no single appropriate way of leading a school. Effective leadership is dependent on school context and phase, and influenced by the current conditions of the school.[184] Nevertheless, there are common features identified in the literature on effective school leadership.

EIF grade criteria:

> ■ Leaders have a clear and ambitious vision for providing high-quality, inclusive education and training to all. This is realised through strong, shared values, policies and practice.
>
> ■ Leaders focus on improving staff's subject, pedagogical and pedagogical content knowledge to enhance the teaching of the curriculum and the appropriate use of assessment. The practice and subject knowledge of staff are built up and improve over time.

Research on vision and a focus on the quality of education

Leadership starts with **vision**. School effectiveness research has long shown that a factor that distinguishes highly effective **schools** is that they are underpinned by a clear, shared vision, which is driven by (but does not have to solely originate from) the headteacher or principal.[185] In their three-year study of effective school leaders, Day and others found that effective headteachers have 'a strong and clear vision and set of values for their school, which heavily influenced their actions and the actions of others, and established a clear sense of direction and purpose for the school. These were shared widely, clearly understood and supported by all staff. **They were a touchstone against which all new developments, policies or initiatives were**

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[181] D Muijs, 'Leadership and organisational performance: from research to prescription?', in 'International Journal of Educational Management', Volume 25, Issue 1, 2011, pages 45–60; P Hallinger, 'Leadership for learning: lessons from 40 years of empirical research', in 'Journal of Educational Administration', Volume 49, Issue 2, 2011, pages 125–142.

[182] K Leithwood, C Day, P Sammons, A Harris and D Hopkins, 'Seven strong claims about successful school leadership', School Leadership and Management, 2006.

[183] K Leithwood, S Patten and D Jantzi, 'Testing a conception of how school leadership influences student learning', in 'Educational Administration Quarterly', Volume 46, Issue 5, 2010, pages 671–706.

[184] C Day, P Sammons, D Hopkins, A Harris, K Leithwood, Q Gu and E Brown, '10 strong claims about successful school leadership', National College for School Leadership, 2010.

[185] C Teddlie and D Reynolds, 'The international handbook of school effectiveness research', Falmer Press, 1999.

tested.'[186] Building vision and setting direction are also identified as one of seven key leadership strategies in Leithwood and others' review, which also suggests that staff involvement in setting direction can aid ownership.[187] However, in the early stages of school turnaround, a more directive approach may be required.

School effectiveness research has put a lot of emphasis on **instructional leadership** as a key driver in effective schools. Instructional leadership is characterised by hands-on involvement with teaching and learning processes, and by leaders leading on pedagogy, curriculum and instruction, rather than taking a more hands-off role and concentrating on administration. Instructional leadership has been described as 'those actions that a principal takes, or delegates to others, to promote growth in pupil learning, make instructional quality the top priority of the school, and bring that vision to realization'.[188] Instructional leaders have a pedagogical and curricular vision and expertise. An instructional leader promotes common approaches to factors such as teaching and behaviour management in the school, monitors teaching, and makes sure that professional development focuses on teaching and learning. In many cases, instructional leaders start the process of school improvement by implementing a particular initiative promoting a particular curricular or pedagogical approach. Leaders focus on enhancing teaching and learning, which includes improving the physical conditions for learning. Teachers are supported in developing teaching approaches.[189]

The importance of vision and instructional leadership can be found across phases. In the EPPE study of effective **early years** settings, for example, leadership was characterised by a clear vision, especially with regard to pedagogy and curriculum. This vision was shared by all staff in the provider. This is facilitated by having a trained teacher as leader or manager of the early years setting.[190] What the content of the vision and focus of instructional leadership is will differ across phases. In early years, for example, there is a need for leaders to have a good understanding of the particular child development needs at this stage. Leaders in early years typically understand and emphasise the importance of both formal teaching and play, and make sure that early literacy and mathematics learning lie at the heart of practice and development, and that teachers have the knowledge and professional development to teach across these areas.[191] They tend to have a strongly child-focused orientation, though in the most

[186] C Day, P Sammons, D Hopkins, A Harris, K Leithwood, Q Gu and E Brown, '10 strong claims about successful school leadership', National College for School Leadership, 2010, quote at page 5.
[187] K Leithwood, C Day, P Sammons, A Harris and D Hopkins, 'Seven strong claims about successful school leadership', School Leadership and Management, 2006.
[188] P Hallinger and R H Heck, 'Exploring the principal's contribution to school effectiveness: 1980–1995', in 'School Effectiveness and School Improvement', Volume 9, Issue 2, 1998, pages 157–191.
[189] C Day, P Sammons, D Hopkins, A Harris, K Leithwood, Q Gu and E Brown, '10 strong claims about successful school leadership', National College for School Leadership, 2010.
[190] I Siraj-Blatchford and L Manni, 'Effective leadership in the early years sector (ELEYS) study', Institute of Education, 2006.
[191] 'Teaching and play in the early years – a balancing act?', Ofsted, July 2015; https://www.gov.uk/government/publications/teaching-and-play-in-the-early-years-a-balancing-act; 'Obesity, healthy eating and physical activity in primary schools. A thematic review into what actions schools are taking to reduce childhood obesity', Ofsted, July 2018; https://www.gov.uk/government/publications/obesity-healthy-eating-and-physical-activity-in-primary-schools.

effective settings a focus on educational development predominates.[192] In further education there is a particular emphasis on distributed leadership, with much of the instructional leadership residing at programme level in the large and dispersed providers in this phase.[193]

The role of senior leaders is also clear in Ofsted's curriculum study. In curriculum-engaged schools studied in phase 2, as well as in the most engaged schools studied in phase 3, senior leaders had a clear vision for the overall curriculum of the school, and ensured accountability for the curriculum. They cannot, of course, be expert in every aspect of curriculum, so they ensure that subject leaders are given autonomy to lead on subject curriculum within the shared vision and accountability framework of the school. This distribution of leadership is crucial to sustainability. Day and others likewise stress curriculum leadership in their review, finding that the heads in their study focus on redesigning and enriching the curriculum.[194] Leaders in our curriculum study were also clear that access to a high-quality curriculum is a right for all pupils.

What can be unhelpful in current definitions of instructional leadership is the way they can suggest an opposition between instructional leadership and administrative and other management tasks, which are a key component of the leadership role.[195] In fairness to authors in the field, instructional leadership is usually seen as a matter of degree rather than an absolute, and it is acknowledged that administrative functions remain an important component of leaders' work. There is significant empirical support for instructional leadership, and the relationship between instructional leadership and educational outcomes is quite well established.[196]

Professional development

Essential to instructional leadership is professional development. There is clear evidence that both the quantity and quality of professional development are related to **school** effectiveness and improvement, and that in countries that are high performing

[192] I Siraj-Blatchford and L Manni, 'Effective leadership in the early years sector (ELEYS) study', Institute of Education, 2006.

[193] D Muijs, A Harris, C Chapman, L Stoll and J Russ, 'Improving schools in socio-economically disadvantaged areas: an overview of research', in 'School Effectiveness and School Improvement', Volume 15, Issue 2, 2004, pages 149–176.

[194] C Day, P Sammons, D Hopkins, A Harris, K Leithwood, Q Gu and E Brown, '10 strong claims about successful school leadership', National College for School Leadership, 2010.

[195] P Hallinger, 'Leadership for learning: lessons from 40 years of empirical research', in 'Journal of Educational Administration', Volume 49, Issue 2, 2011, pages 125–142.

[196] C Day, Q Gu and P Sammons, 'The impact of leadership on student outcomes: how successful school leaders use transformational and instructional strategies to make a difference', in 'Educational Administration Quarterly', Volume 52, Issue 2, 2016, pages 221–258; C Teddlie and S Stringfield, 'Schools make a difference: lessons learned from a ten year study of school effects', Teachers College Press, 1993; P Hallinger, 'Leadership for learning: lessons from 40 years of empirical research', in 'Journal of Educational Administration', Volume 49, Issue 2, 2011, pages 125–142; E Horng and S Loeb, 'New thinking about instructional leadership', in 'Phi Delta Kappan', Volume 92, Issue 3, 2010, pages 66–69; H M Marks and S M Printy, 'Principal leadership and school performance: integrating transformational and instructional leadership', in 'Educational Administration Quarterly', Volume 39, Issue 3, 2003, pages 370–397; P Hallinger and R H Heck, 'Exploring the principal's contribution to school effectiveness: 1980–1995', in 'School Effectiveness and School Improvement', Volume 9, Issue 2, 1998, pages 157–191.

on international tests such as the Programme for International Student Assessment (PISA), teachers spend more time on professional development.[197] The Teaching and Learning International Survey (TALIS) found that teachers who take part in curriculum-focused professional development are more likely to report using a variety of the instructional methods considered in this review.[198] In the EPPE study of **early years** settings, staff members in the effective settings were encouraged to attend staff development, although what these looked like differed quite markedly.[199] There is evidence that well-designed CPD programmes can have a positive impact on pupils' outcomes.[200] However, we also know that a lot of professional development has no effect, or at least none that influences pupils' learning and attainment. There is a body of research on what constitutes effective professional development, and a number of major reviews have summarised these studies.

A major 'review of reviews' by Cordingley and others for the Teacher Development Trust in England found a number of factors that characterise effective CPD programmes:

- Longer programmes tend to be more effective than short-term interventions, and most effective CPD has to last at least two terms to have an impact. However, time in itself is not the most important factor; it is what is done within that time that really matters.

- Effective CPD requires follow-up, practice and support. Just as with pupils, you cannot just teach something and expect it to be remembered and implemented.

- CPD needs to be relevant to the everyday work of teachers for it to have impact.

- CPD needs to be differentiated by teachers' starting points, and should not just have a one-size-fits-all approach.[201]

- CPD can allow teachers to engage in peer learning and collaboration.

- Subject knowledge and pedagogy (effective teaching) are equally important, although generic topics (for example, assessment for learning) are best embedded within a particular subject.

- CPD has to have clear goals and progression.

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[197] S Higgins, P Cordingley, T Greany and R Coe, 'Developing great teaching: a review of international research', Teacher Development Trust, 2014; A Schleicher, 'Building a high-quality teaching profession. Lessons from around the world', Organisation for Economic Co-operation and Development, 2018.
[198] 'The teaching and learning international survey 2013', European Commission, 2014; http://ec.europa.eu/assets/eac/education/library/reports/2014/talis_en.pdf.
[199] I Siraj-Blatchford and L Manni, 'Effective leadership in the early years sector (ELEYS) study', Institute of Education, 2006.
[200] S Higgins, P Cordingley, T Greany and R Coe, 'Developing great teaching: a review of international research', Teacher Development Trust, 2014.
[201] P Cordingley, S Higgins, T Greany, N Buckler, D Coles-Jordan, B Crisp, R Coe, L Saunders and T Greany, 'Developing great teaching – lessons from the international reviews into effective professional development', Teacher Development Trust, 2015.

- The most effective CPD has some external input. External providers can:
  - make the knowledge base in their field available to participants
  - introduce participants to new knowledge and skills
  - help teachers believe they can make a difference to pupil outcomes, even those of pupils in the most disadvantaged circumstances
  - make links between professional learning and pupil learning explicit through discussion of pupil progression and analysis of assessment data
  - act as mentors and facilitators, not just as teachers or lecturers.

- CPD activities can build in classroom practice and experimentation, to ensure that transfer of learning to the classroom occurs.

- Teachers need to understand the underlying theory of or rationale for what they are being taught.

- Effective CPD fosters teachers' metacognitive skills.

Teachers' professional development needs to be built on and into subject content and often develops both content knowledge and pedagogical content knowledge. Ideally, it should be curriculum aligned, be of substantial duration and actively involve the teachers in learning and reflection. The Organisation for Economic Co-operation and Development TALIS survey, which is a large-scale international survey of teachers and principals, found that teachers in England spend a lot of time on short courses and in workshops, but little time on more in-depth activities.[202]

Consistency

Consistency is one of the key factors that distinguish more effective from less effective schools and is a central part of models of school effectiveness. It is, for example, not typically the case that schools that are ineffective do not have any effective teachers. Rather, they tend to show great variation in effectiveness, while highly effective schools have largely eliminated any ineffective practice and reduced variation.[203]

Creating coherence means ensuring that practices at different levels are aligned, so, ideally, school-level policies should be mirrored in departmental policies and in classroom and school practices.[204] Key ways of achieving this are through creating a strong, shared vision and ethos in the school, ensuring accountability within the school, and creating learning within the school, so best practice can quickly spread throughout

[202] J Micklewright, J Jerrim, A Vignoles, A Jenkins, R Allen, S Ilie, E Bellarbre, F Barrera and C Hein, 'Teachers in England's secondary schools: evidence from TALIS 2013', Department for Education, 2014.
[203] D Reynolds, 'Failure free education? The past, present and future of school effectiveness and school improvement', Routledge, 2010; B P M Creemers and L Kyriakides, 'Using the Dynamic Model to develop an evidence-based and theory-driven approach to school improvement', in 'Irish Educational Studies', Volume 29, Issue 1, 2010, pages 5–23; J Ko and P Sammons, 'Effective teaching: a review of research', report commissioned by CfBT, Department of Education at the University of Oxford, 2014.
[204] B P M Creemers and L Kyriakides, 'The dynamics of educational effectiveness: a contribution to policy, practice and theory in contemporary schools', Routledge, 2008.

the organisation. In these ways, schools can **reduce within-school variation** (WSV). This necessitates focused leadership and an openness to learn within the organisation. Reducing WSV should not of course result in inflexibly uniform practice regardless of a school's culture, traditions and existing improvement plans. Rather, it is intended to ensure that practices that the school has identified as effective for improving learning and raising pupil achievement are adopted as widely as possible across all subjects. In short, reducing WSV can help to ensure that effective practice becomes everyday practice for all.[205]

In part by creating coherence and consistency, leaders play a key role in ensuring that schools are able to introduce and implement change effectively. This also includes ensuring that implementation is a structured process, where leaders actively plan, resource, monitor and embed significant changes, such as the introduction of new curriculums or behaviour management systems.[206]

School inspection handbook grade criterion:

> ■ Leaders aim to ensure that all pupils complete their programmes of study. They provide the support for staff to make this possible and do not allow off-rolling.

Research on off-rolling

The practice of off-rolling, whereby pupils are removed from **school** rolls before they can take part in national examinations, is one that is causing increasing concern as evidence of the scale of the problem grows. Removing children purely for the purposes of boosting results is illegal. Of course, there may be a need for individual pupils to move to a more appropriate provider, but wholescale moves suggest that in some cases schools are using the process to 'game' accountability measures, with possible detrimental effects on pupils (see section on exclusions in 'Behaviour and attitudes') and on the validity of accountability measures. Research by Education Datalab shows clearly that there is a spike in the number of pupil moves in Year 10, the year before they usually take GCSEs.[207] Its analyses also show that the problem appears to be increasing.

Ofsted conducted an analysis of pupil-level data from the DfE's school census and tracked pupils that were in Year 10 in 2016 and would be expected to be in Year 11 of the same school in 2017. More than 19,000 pupils did not progress from Year 10 to

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[205] D Reynolds, 'Schools learning from their best: the within school variation (WSV) project', National College for School Leadership, 2012.

[206] C B Dyssegaard, N Egelund and B Sommersel, 'A systematic review of what enables or hinders the use of research-based knowledge in primary and lower secondary school', Aarhaus University, Danish Clearinghouse for Educational Research, 2017; 'Putting evidence to work: a schools guide to implementation', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/tools/guidance-reports/.

[207] Education Datalab, 'Who's left 2018', 2018; https://ffteducationdatalab.org.uk/tag/off-rolling/.

Year 11 of the same state-funded secondary school.[208] Many of these 19,000 pupils moved to another state-funded school, but approximately half did not appear in the census of any state-funded school. We found that pupils with SEND, pupils eligible for FSM, children looked after and children from some ethic minority groups were more likely to be affected, which illustrates the equity issues involved with this practice.

Off-rolling is more likely to occur in London and is more prevalent in academies than local authority schools. Conversely, local authority schools seem to be taking on proportionately more pupils. We developed a statistical model that used pupil characteristics to predict 'typical' levels of off-rolling. This allowed us to then identify those schools that have significantly higher levels of off-rolling than would be statistically expected. We identified 300 schools with significantly higher than predicted rates of off-rolling over the past two years, which suggests that the problem is highly concentrated in a small number of schools.[209]

School inspection handbook grade criterion:

> ■ Leaders engage effectively with learners and others in their community, including – where relevant – parents, carers, employers and local services.

Research on parental and community engagement

That the extent to which parents care about and are involved in their children's education matters is undisputed. The clearest evidence is on the impact of the involvement of parents in their children's learning.[210] In most studies, greater parental involvement is associated with better outcomes. In a meta-analysis of 37 studies, for example, Castro and others found a positive moderate relationship between parental involvement and pupil attainment.[211] However, while the value of parental involvement is clear, less is known about how to effectively engage parents with their children's education, particularly for children from disadvantaged families. For example, engaging parents can be challenging if they feel they did not succeed at school. It tends to be easier to get parents involved at the earlier stages of their children's education (especially early years and primary) than later on.[212]

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[208] J Bradbury, 'Off-rolling: using data to see a fuller picture', Ofsted, 2018; https://educationinspection.blog.gov.uk/2018/06/26/off-rolling-using-data-to-see-a-fuller-picture/.
[209] J Bradbury, 'Off-rolling: using data to see a fuller picture', Ofsted, 2018; https://educationinspection.blog.gov.uk/2018/06/26/off-rolling-using-data-to-see-a-fuller-picture/.
[210] C Desforges, 'The impact of parental involvement, parental support and family education on pupil achievements and adjustment: a literature review', Department for Education and Skills, 2003; S Higgins and M Katsipataki, 'Evidence from meta-analysis about parental involvement in education which supports their children's learning', in 'Journal of Children's Services', Volume 10, Issue 3, 2015, pages 280–290.
[211] M Castro, E Expósito-Casas, E López-Martín, L Lizasoain, E Navarro-Asencio and J L Gaviria, 'Parental involvement on student academic achievement: a meta-analysis', in 'Educational Research Review', Volume 14, Issue 1, 2015, pages 33–46.
[212] C Desforges, 'The impact of parental involvement, parental support and family education on pupil achievements and adjustment: a literature review', Department for Education and Skills, 2003; S Higgins and M Katsipataki, 'Evidence from meta-analysis about parental involvement in education which supports their children's learning', in 'Journal of Children's Services', Volume 10, Issue 3, 2015, pages 280–290.

There is some evidence that providing practical advice on how parents can support learning at home can be effective. For example, for younger children schools might promote shared book reading, while for older children an emphasis might be placed on developing homework routines and effective study habits.[213] In addition, some schools have successfully improved parental involvement by focusing on the way they communicate with parents. For example, there is some evidence that tailored weekly text messages can be effective in improving attendance and attainment.[214] In some cases, targeted work with parents may be productive, but care needs to be taken not to engage in overly time-consuming activities where pay-off may be limited.[215]

The EPPE study of **early years** settings showed that home educational provision and consistency across home and early years setting (and between parents and early years staff) promotes achievement for young children,[216] a finding also reported in a number of other studies.[217] In the EPPE study, the most effective settings provided parents with regular information through records of achievement and monthly meetings with key workers. They focus on what they are teaching the children and report regularly on the children's achievements. This allows parents to complement the learning done in the setting and enhances consistency between home and provider.[218]

The leaders in Day and others' study clearly recognise the importance of relationships with the local community.[219] They see building and improving the reputation of the school and engaging with the wider community as essential to achieving long-term success. They work to build strong links with local organisations and have links to key stakeholders in their communities.

EIF grade criterion:

- Leaders engage with their staff and are aware and take account of the main pressures on them, including their workload. They are realistic and constructive in the way they manage.

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[213] 'Guidance report on parental engagement', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/school-themes/parental-engagement/.

[214] B N York, S Loeb and C Doss, 'One step at a time: the effects of an early literacy text messaging program for parents of preschoolers', Center for Education Policy Analysis, 2014; S Miller, J Davison, J Yohanis, S Sloan, A Gildea and A Thurston, 'Texting parents: evaluation report and executive summary', Education Endowment Foundation, 2016.

[215] 'Guidance report on parental engagement', Education Endowment Foundation, 2018; https://educationendowmentfoundation.org.uk/school-themes/parental-engagement/.

[216] K Sylva, E Melhuish, P Sammons, I Siraj-Blatchford and B Taggart, 'Early childhood matters', Routledge, 2010.

[217] For example, S Arvizu, 'Family, community, and school collaboration', in 'Handbook of research on teacher education', edited by J Sikula, Simon and Schuster Macmillan, 1996, pages 814–819; J Epstein, 'Family structures and student motivation: a developmental perspective', in 'Research on motivation in education, v.3: goals and cognitions', edited by C Ames and R Ames, Academic Press, 1989.

[218] K Sylva, E Melhuish, P Sammons, I Siraj-Blatchford and B Taggart, 'Early childhood matters', Routledge, 2010; I Siraj-Blatchford and L Manni, 'Effective leadership in the early years sector (ELEYS) study', Institute of Education, 2006.

[219] C Day, P Sammons, D Hopkins, A Harris, K Leithwood, Q Gu and E Brown, '10 strong claims about successful school leadership', National College for School Leadership, 2010.

Research on staff well-being

Staff well-being and workload are central concerns in the education sector. According to the 'Labour force survey' (LFS), teaching is one of the three professions with the highest reports of stress and depression, at a rate of 2.64 cases per 100 professionals compared with 1.23 cases for all occupational groups.[220] A National Audit Office report revealed that, in 2016, 35,000 teachers left their jobs for reasons other than retirement.[221] Sixty-seven per cent of **school** leaders reported that workload is a barrier to teacher retention. Similarly, in a study commissioned by the DfE, classroom teachers and middle leaders reported that they worked, on average, 54.4 hours during the reference week in March 2016, including the weekend.[222] Research suggests that teachers in England work longer hours than those in other countries, and there is evidence that occupational well-being can be low.[223] In a large-scale survey by the National Association of Schoolmasters Union of Women Teachers (NASUWT), 79% of teachers reported that their job had impacted negatively on their well-being, and 60% stated that they felt that their well-being was not considered important by their school.[224] More than half (55%) of teachers stated that the job had adversely affected their mental health in the last 12 months, and half said that the job had adversely affected their physical health.

These issues led Ofsted to conduct a research project on occupational well-being in **schools and colleges**. This project consisted of three main parts: a literature review on occupational and teacher well-being, a survey and a series of case study visits to schools and colleges.

The survey took place in two phases: it was run in June/July 2018 and again in November 2018. The survey measured overall occupational well-being as well as specific aspects thereof and contained questions on key predictors of teacher well-being. The survey was sent out to a random sample of schools and colleges to be distributed to leaders, teachers and teaching assistants.

In June/July, we received responses from 499 teachers, 94 members of SLTs and 88 classroom assistants. The findings from the first phase of the survey confirm the picture that has emerged from other studies. Fifty-nine per cent of teachers, 35% of senior leaders and 47% of classroom assistants reported low to medium levels of overall occupational well-being. Over 50% of teachers and senior leaders disagree or strongly disagree that they have an acceptable workload (the percentage for classroom assistants was 13%), and 70% of leaders and 48% of teachers work out of hours

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[220] UK Health and Safety Executive, 'LFS – Labour Force Survey – Self-reported work-related ill health and workplace injuries', 2017; https://www.hse.gov.uk/statistics/lfs/index.htm.

[221] 'Retaining and developing the teaching workforce', National Audit Office, 2017; https://www.nao.org.uk/report/supporting-and-improving-the-teaching-workforce/.

[222] J Higton, S Leonardi, N Richards, A Choudoury, N Sofroniou and D Owen, 'Teacher workload survey 2016', Department for Education, 2017.

[223] P Sellen, 'Teacher workload and professional development in England's secondary schools: insights from TALIS'. Education Policy Institute, 2016.

[224] 'The big question 2017', National Association of Schoolmasters Union of Women Teachers, 2017; https://www.nasuwt.org.uk/article-listing/big-question-survey-report-2017.html.

every day. This points to a lack of work–life balance and confirms findings from the NASUWT survey, in which over 80% of teachers said that they felt too tired to enjoy doing the things they like to do and only 10% said that they had enough time and energy for hobbies.[225] However, 50% of teachers and 65% of leaders agree or strongly agree that their workload is suitable for their skills set.

There are also some more positive findings: 78% of teachers, 89% of classroom assistants and 85% of school leaders agree or strongly agree that overall they are satisfied with their job, and over 80% of teachers and leaders agree that their job gives them a feeling of work well done.

When asked what factors have a negative impact on their well-being, respondents pointed to a lack of support (from senior leaders), pupils' behaviour, workload and marking pupils' work as key factors.

Respondents were also asked what things have the most positive impact on their well-being in school. The responses highlight the importance of relationships, in particular those with colleagues and pupils.

Similarly, in the NASUWT survey, when teachers were asked which aspects of their job they enjoyed most, they highlighted interacting with pupils (90%), seeing young children progress (86%), teaching (83%), making a positive difference (77%), and support from colleagues (40%). In Day and others' study, effective school leaders were found to strive to develop positive relationships with staff and ensure that relationships between members of staff were positive.[226] They developed close working relationships with their SLT and showed a genuine concern for staff well-being.

Research on teacher well-being shows that relationships with pupils and pupil behaviours matter greatly. Student misbehaviour and a disruptive classroom can lead to emotional exhaustion for teachers.[227] This can result in a vicious circle, since teachers tend to express negative emotions in response to student misbehaviour, which then leads to a detrimental classroom climate.[228]

Overly high **workload** has been associated with aspects of teacher burnout such as exhaustion and the coping mechanism of distancing oneself emotionally and cognitively.[229] Furthermore, workload has been linked to teacher drop-out. Workload is

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[225] 'The big question 2017', National Association of Schoolmasters Union of Women Teachers, 2017; https://www.nasuwt.org.uk/article-listing/big-question-survey-report-2017.html.

[226] C Day, P Sammons, D Hopkins, A Harris, K Leithwood, Q Gu and E Brown, '10 strong claims about successful school leadership', National College for School Leadership, 2010.

[227] D Osher, J Sprague, R P Weissberg, J Axelrod, S Keenan and K Kendziora, 'A comprehensive approach to promoting social, emotional, and academic growth in contemporary schools', in 'Best practices in school psychology', edited by A Thomas and J Grimes, Volume 5, 5th edition, National Association of School Psychologist, 2007, pages 1263–1278.

[228] R Pianta, C Howes, D Early, R Clifford, D Bryant and M Burchinal, 'Observations of quality and practices in pre-k classrooms: associations with child outcomes and teacher attributes', paper presented at the biennial Meeting of the Society for Research in Child Development, 2003.

[229] C Maslach, W B Schaufeli and M P Leiter, 'Job burnout', in 'Annual Review of Psychology', Volume 52, 2001, pages 397–422.

related to **work–life balance**, which has been highlighted as an important predictor of well-being in a number of studies.[230]

Autonomy and agency, including control by a professional of their own working environment, are positively associated with professional well-being. Control can be conceptualised as both an environmental condition (for example, the authority to take actions) and as a perception of those conditions.[231] There is evidence suggesting that perceived control is a better predictor of well-being than actual control. In relation to autonomy, a form of control, a distinction has been made between control over how the work is done ('method autonomy'), the working hours ('schedule autonomy') and about what should be done ('criteria autonomy').[232] Positively, evidence from the international comparative TALIS study suggests that most teachers in England either disagree (56%) or strongly disagree (15%) with the statement that they lack the autonomy they need to do a good job as a teacher.[233] This, however, will always need to be balanced with the need for whole-school consistency as discussed above.

Self-efficacy is an individual's belief in their capability to exercise control over challenging demands.[234] There are a number of studies showing that low self-efficacy is related to teacher stress and a higher likelihood of leaving the profession.[235] The TALIS study suggests that UK teachers have relatively high levels of self-efficacy.[236]

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[230] M T Ford, B A Heinen and K L Langkamer, 'Work and family satisfaction and conflict: a meta-analysis of cross-domain relations', in 'Journal of Applied Psychology', Volume 92, 2007, pages 57–80; M R Frone, 'Work–family conflict and employee psychiatric disorders: the National Comorbidity Survey', in 'Journal of Applied Psychology', Volume 85, 2000, pages 888–895; T A Judge and J A Colquitt, 'Organizational justice and stress: the mediating role of work–family conflict', in 'Journal of Applied Psychology', Volume 89, 2004, pages 395–404.
[231] E M Eatough and P E Spector, 'The role of workplace control in positive health and wellbeing', in 'Work and Wellbeing', Volume 3, 2014, pages 21–32, page 92.
[232] Breaugh 1999, as cited in E M Eatough and P E Spector, 'The role of workplace control in positive health and wellbeing', in 'Work and Wellbeing', Volume 3, 2014, pages 21–32, page 93.
[233] J Micklewright, J Jerrim, A Vignoles, A Jenkins, R Allen, S Ilie, E Bellarbre, F Barrera and C Hein, 'Teachers in England's secondary schools: evidence from TALIS 2013', Department for Education, 2014.
[234] A Bandura, 'Self-efficacy: the exercise of control', W H Freeman/Times Books/Henry Holt and Co, 1997.
[235] Such as E M Skaalvik and S Skaalvik, 'Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout', in 'Journal of Educational Psychology', Volume 99, 2007, pages 611–625; R M Klassen and M M Chiu, 'The occupational commitment and intention to quit of practicing and pre-service teachers: influence of self-efficacy, job stress, and teaching context', in 'Contemporary Educational Psychology', Volume 36, Issue 2, 2011, pages 114–129.
[236] J Micklewright, J Jerrim, A Vignoles, A Jenkins, R Allen, S Ilie, E Bellarbre, F Barrera and C Hein, 'Teachers in England's secondary schools: evidence from TALIS 2013', Department for Education, 2014.

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