

Effective teaching:

a review of research and evidence

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School improvement: international reviews of best practice

Working with partners including the Department of Education at Oxford University, the Centre for Equity in Education at the University of Manchester, the University of Glasgow, the University of Nottingham and the Hong Kong Institute of Education, CfBT Education Trust has commissioned a series of reviews of international literature. These reviews cover a range of topics related to school improvement including assessment for learning; the inclusion of students with special educational needs; effective teaching practice; school self-evaluation; and successful school leadership.

The idea that schools can impact positively on student outcomes is a crucial driver in the rise of interest in school improvement research and practice. These reviews highlight international examples of best practice in order to effect change and identify how effective school improvement manifests itself. It forms a useful tool for schools and school leaders, but also acts as a lesson for policymakers in terms of what works around the world.

This review focuses on: **Effective teaching**
Teachers are one of the key elements in any school and effective teaching is one of the key propellers for school improvement. This review is concerned with how to define a teacher's effectiveness and what makes an effective teacher. It draws out implications for policymakers in education and for improving classroom practice.



The other four reviews in this series focus on:

Assessment for learning
Assessment for learning – where the first priority is to promote learning – is a key means of initiating improvement. The features, strategies and principles underpinning assessment for learning form the basis of this review.

From exclusion to inclusion
With a specific focus on children with special educational needs (SEN), this review addresses the forms of classroom practice that can help all children to participate. The review particularly focuses on elements of inclusive education and the implications for schools and school leaders.

School self-evaluation for school improvement
School self-evaluation can be a fundamental force in achieving school improvement. This review establishes what the key debates are in relation to school self-evaluation, what principles and processes are associated with it, and what the implications are for school self-evaluation as a means of leading school improvement. The review also incorporates a framework for conducting self-evaluation and case study examples from systems and schools that have previously undergone the process.

Successful leadership
School leaders are under considerable pressure to demonstrate the contribution of their work to school improvement, which has resulted in the creation of a wide range of literature which addresses leadership in the context of school improvement. This review pays particular attention to issues including transformational leadership, instructional/pedagogical leadership and distributed leadership.

CfBT is a world authority on school improvement. We work directly with schools and governments improving education outcomes through evaluation, training and professional development programmes. This series of reviews fits into our aim to develop evidence for education and supports our goal to provide school improvement programmes which are evidence based.

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Executive summary

Teacher effectiveness is generally referred to in terms of a focus on student outcomes and the teacher behaviours and classroom processes that promote better student outcomes.

This review, based upon research evidence, suggests that effective teachers:

- are clear about instructional goals
- are knowledgeable about curriculum content and the strategies for teaching it
- communicate to their students what is expected of them, and why
- make expert use of existing instructional materials in order to devote more time to practices that enrich and clarify the content
- are knowledgeable about their students, adapting instruction to their needs and anticipating misconceptions in their existing knowledge
- teach students meta-cognitive strategies and give them opportunities to master them
- address higher- as well as lower-level cognitive objectives
- monitor students' understanding by offering regular appropriate feedback
- integrate their instruction with that in other subject areas
- accept responsibility for student outcomes.

The review shows that in order to achieve good teaching, good subject knowledge is a prerequisite. Also, the skilful use of well-chosen questions to engage and challenge learners, and to consolidate understanding, is an important feature, as is the effective use of assessment for learning.

It goes on to identify a number of characteristics of good schools, suggesting they:

- establish consistency in teaching and learning across the organisation
- engender a culture of professional debate and developmental lesson observation
- rigorously monitor and evaluate what they are doing
- prioritise the teaching of literacy, especially in a child's early years
- focus on the needs, interests and concerns of each individual learner.

Introduction

This report highlights key issues and findings about two related but distinctive topics – how to define a teacher's effectiveness and what is known about effective teaching practices. It also seeks to identify the implications for policymakers in education and for improving classroom practice. The report also includes the study of inspection evidence that involves making judgements about teaching quality in schools.

It examines the meaning of 'effective teaching' and the ways the literature defines who are considered to be 'effective teachers' both in terms of research and inspection evidence and also from the perspectives of various key stakeholders in education (teachers, school principals, students and parents). Drawing on a large body of research evidence, it seeks to identify and summarise some of the key characteristics and processes of effective classroom practices, including particular features of pedagogy (by which we refer to strategies of instruction).[1]

In summarising the evidence the main focus is on features of effective teaching and classroom organisation that lead to better student outcomes. We also identify some implications for policymakers and practitioners seeking to improve educational practice and student outcomes. In addition, the review highlights some of the difficulties inherent in trying to identify teacher effects, and in the characterisation and categorisation of effective practices. We consider some issues of the measurement challenge that have to be considered in trying to identify teacher effects and the characteristics and processes of effective teaching. Examples of classroom observation instruments that can be used to identify various dimensions of effective teaching practices are also discussed.

The main sections in this report discuss the definition of teacher and teaching effectiveness in more detail, outline the different perspectives and sources of evidence that can be used, and explore measurement issues. Then findings are presented on the knowledge base and characteristics of effectiveness in teaching and classroom practices, and models and theories used in teacher effectiveness research (TER) and school effectiveness research (SER). Five interrelated challenges are used to organise the review evidence, and for each of these challenges, a number of relevant questions will be addressed (see Table 1, following).

[1] Pedagogy refers to the strategies of instruction, or a style of instruction. For example, Muijs & Reynolds (2000) compared the relative effectiveness of instruction methods like Direct Teaching, Individual Practice, Interactive Teaching, and Constructivist Methods.

Table 1: Challenges in studying teaching and teacher effectiveness and some related questions

Challenges	Relevant questions
The Definition challenge	How are we going to define effective teaching? Should it be restricted to teaching in the classroom only? Is effectiveness best viewed in relation to the teacher's influence on student academic outcomes? What other educational outcomes do we look at? When do we look at the outcomes?
The Perspective challenge	Who are best placed to judge teacher effectiveness? How do they define what constitutes effective teaching?
The Characterisation challenge	What makes a teacher highly effective? What do they do to make their teaching effective? What does their teaching look like? How can we characterise effective teaching? How can we measure its relative effects?
The Measurement challenge	How can we measure effective teaching? What instruments do we use? What sources of evidence should we look at? What evidence should we give more weight to?
The Theorisation challenge	How can we organise research evidence on effective teaching in a holistic fashion? How do the models explain the contingencies of effective teaching? How do the models address the problem of differential teacher effectiveness and its consequences?

The Definition challenge

Defining the effective teacher, effective teaching and teaching effectiveness can be complex and controversial. 'Effectiveness' is a contested term that can evoke strong emotions because of its perceived links with notions of professional competency and high stakes accountability in some systems. It may question individual teachers' beliefs about their professional autonomy.[2] Notions of what constitutes high quality or good teaching, the idea that teaching is an art or a craft rather than a science, are sometimes used to raise concerns with narrower concepts of effectiveness. However, beliefs about what constitutes 'good' or 'high' quality practice in teaching can vary markedly for different age groups of students, at different times and in different contexts.

Educational effectiveness is a term that was developed to provide a more contained definition than notions of 'good' or 'quality' education. It relates to the idea of examining effectiveness at different levels of an education system, such as nationally, at a Local Authority/School district level, for individual schools, for departments within a school or for individual teachers in terms of their success in achieving particular goals or educational outcomes.

Educational effectiveness researchers who study school and teacher effectiveness have emphasised the need to unpack the concept of effectiveness by addressing questions such as:

- Effective in promoting *which outcomes?* This relates to the goals of education for students.
- Effective over *what time period?* This relates to the idea of change and improvement over time.
- Effective *for whom?* This relates to effectiveness in promoting outcomes for different groups of students (e.g. by gender or ethnic/language group).[3]

Key idea: Effective teaching requires criteria for effectiveness. These criteria refer to the objectives of education in general and of teaching in particular. Visions about the criteria are the result of a political and societal debate, but educational professionals, teachers and schools can also take part in it. Although objectives of education have changed over time, language, reading and mathematics remain the core studies.[4]

When we seek to define educational effectiveness in this way we recognise that a focus on outcomes reflects the value-driven choices and priorities about the goals of education that are deemed to be important in the wider education system (for example by policymakers in central or local government and at the individual school or departmental level).[5] The emphasis on the achievement of agreed outcomes is often prioritised. For example, one definition that has been given is:

A teacher is effective if he/she can accomplish the planned goals and assigned tasks in accordance with school goals.[6]

[2] Sammons (1996); Day (2004).
[3] Sammons (1996).
[4] Creemers (1999: 51).
[5] Stufflebeam & Shinkfield (1995); Sammons (1996).
[6] Campbell et al. (2004: 61).

Thus, the objectives of education and the definitions of the quality and effectiveness of education are closely connected. This means that defining effective teaching must be done in relation to understanding the *objectives of education*. Promoting students' cognitive development can be seen as one of the prime purposes of education and teaching, though there are also likely to be other important social, behavioural and affective current and future oriented purposes and goals of education. These might include developing students to become good citizens, promoting their physical, emotional and economic well-being and inculcating skills and attitudes that encourage lifelong learning. Therefore:

Even when the objectives of education change, the stable component in it is that at least schools and education have to contribute to the cognitive development of students. The same holds for teaching. Even when we expect that schools can contribute to more than academic outcomes, and teaching is more than instruction, effective instruction remains an important component of it.[7]

Key questions:
What are the main goals or objectives for education in my education system?

How have they changed during the last decade and what are the implications for schools and for teachers' work?

Terms such as 'instructional effectiveness', 'teacher effectiveness' and 'teaching effectiveness' have been used interchangeably in much of the research literature.[8] This reflects the fact that the primary nature of a teacher's work is instructional and that teaching or instruction is generally carried out in the classroom. Part of the confusion is because sometimes the focus is on the teacher's influence on student outcomes, and at other times on the classroom behaviours and practices that teachers use to promote better outcomes for students. Table 2 illustrates some definitions found in the literature.

Teacher effectiveness is generally referred to in terms of the focus on student outcomes and the teacher behaviours and classroom processes that promote better student outcomes as outlined in the TER definitions (numbered 1–3 in Table 2). However, some authors view teacher effectiveness in a broader sense. They adopt criteria that seek to encompass the duties that are seen to be part of the wider role of teachers in the 21st century (as suggested in definitions 4–6 of Table 2), because the role of a teacher is rarely restricted to instruction only. In many countries a teacher's work has extended beyond the instructional or pedagogical role in the classroom. He/she may be facilitating his/her colleagues' teaching, engaging in broader leadership roles in the school, enhancing the quality of his/her teaching through his/her own reflection or engaging in professional development programmes.

[7] Creemers (1999: 52).
[8] Like Scheerens (2004, 2008).

Table 2: Definitions of effectiveness

1. An operative definition focusing on observations of teaching in the classroom	The effectiveness of observable behaviours seen during classroom observation of a typical lesson.[9]
2. A value-added definition prevailing in the SER that focuses on student outcomes	The ability to produce gains on student achievement scores;[10] taking account of a baseline measure of students' prior attainment and other characteristics of student intake, the teacher effect is identified in relation to students' progress measured by later attainment. Such measures are often calculated in terms of progress over a school year.
3. A narrow TER definition that focuses on the relationship between teacher behaviours and classroom practices and student outcomes	The impact on students' performance of various classroom process factors like teaching methods, teacher expectations, classroom organisation, and use of classroom resources.[11]
4. A broader TER definition which includes references to factors beyond the classroom processes	Covers pre-existing teacher characteristics, teacher competence, teacher performance/behaviour, students' learning experience, student behaviour or learning outcomes, teacher training, external teaching context, internal teaching context and individual student characteristics.[12]
5. Differentiated teacher effectiveness	Covers the consistency of teacher effects in terms of time stability, subject consistency, differentiation in the requirements of the stakeholders (e.g. students, colleagues, parents) and working environments (e.g. school type, community) for instructional and non-instructional roles.[13]
6. Total teacher effectiveness	Nine components in Definition 4 plus teacher evaluation and professional development.[14]

[9] Ko (2010).
[10] Little, Goe & Bell (2009).
[11] Campbell et al. (2004).
[12] Medley (1982: 1894-5).
[13] Campbell et al. (2004).
[14] Cheng (1995, 1996); Cheng & Tsui (1996).

Analyses of students' progress or learning gains measured in achievement tests can be used to produce value-added indicators of teacher effectiveness. However, these can provide only a partial source of evidence if the achievement tests do not reflect the wider goals and outcomes of education. Nonetheless, students' performance levels in cognitive attainment in core areas such as language, reading, mathematics – and increasingly in science and technology – remain highly important for most countries and are the focus of many attempts at educational reform and system-wide improvement. The increased attention paid to the results of variations within and between countries in international achievement tests such as PIRLS, TIMMS and PISA, and the impact of relatively poor performance in such tests leading to concerns about economic competitiveness is well documented. In European countries such as Germany and Denmark, as well as the US, for example, concerns about poor country results in international performance have stimulated major reform initiatives to increase the quality of teaching and education to enhance student attainment levels. Increased accountability and standards-based reforms have also been linked to sustained improvements in attainment levels in England, and these have laid an emphasis on improving teaching (for example, through introducing inspection, reforms to teacher education and professional development, and later through the National Literacy and Numeracy Strategies for primary schools in the late 1990s).[15]

[15] McCaffrey et al. (2003, 2004); Darling-Hammond et al. (2010).
[16] Döbert, Klieme & Sroka (2004).
[17] Döbert & Sroka (2004).
[18] Sammons (2008).

The Perspective challenge

There are numerous sources of information and data about teachers' behaviour and classroom practices that can be drawn upon to provide evidence to inform our understanding of teacher effectiveness. These sources involve a range of data collection methods (e.g. classroom observation, interviews, inspection frameworks and judgements by trained professionals, examination and test data about student achievement, policy documentation, and questionnaire surveys). There are also different informants offering perspectives from key stakeholders in the system, including inspectors, school principals, heads of departments, teachers and students.

Key idea: Different sources of information can be used to provide evidence about teacher effectiveness and effective teaching practices, e.g.

- analyses of students' educational outcomes including attainment in core areas like language, mathematics and science
- professional judgements by inspectors
- observation of teachers' classroom practices
- students' and teachers' views.

As noted earlier there is a tradition in TER of using measures of student attainment (especially value-added analyses of student progress or gains in attainment) and other non-cognitive student outcomes data (e.g. academic self-concept, behaviour and attitudes to learning) to identify both school effects and teacher effects. Estimates suggest that schools account for around 5–15 per cent of the variation in student outcomes after taking account of students' prior attainment and background, while teacher effects are generally much larger at 20–40 per cent when progress is examined over an academic year (more details on value-added indicators of effectiveness are provided in the section on measurement).

Such *value added studies* show that teachers vary in their effectiveness in promoting student learning as measured by their progress. They have also been used to allow the study of which teacher behaviours and practices account for the variations in student progress,[19] thus allowing the identification of teachers whose students make significantly better progress than similar students do in general. These allow researchers to conduct case studies of highly effective teachers and their practices.[20]

Reviews of TER have produced results that identify consistent patterns of teacher practices that promote better outcomes for students, and these provide a valuable source of evidence on some key features of effective teaching.[21] For example, whole-class interactive teaching was found to relate to seven 'behaviourist' effective teaching factors (i.e. classroom management, behaviour management, direct teaching, varied teaching, interactive teaching, individual practice, and classroom climate).[22] We discuss these features in more detail in later sections.

[19] Muijs & Reynolds (2000).
[20] Muijs & Reynolds (2000); Day et al. (2006); Siraj-Blatchford et al. (2011).
[21] E.g. Porter & Brophy (1988); McBer (2000); for details, see the Measurement section; in particular, the discussion on effective teaching variables identified by Hattie's (2009) synthesis of meta-analyses and the 'best practice' identified by Slavin's (2010) meta-analysis. See also Muijs & Reynolds' (2000) characterisation of multidimensionality of teaching.
[22] Muijs & Reynolds (2000).

Inspection evidence

School inspection serves different purposes in different countries. In some systems it is used for quality assurance and accountability purposes. In others it is intended to help support teachers in developing and improving their practices. In England, the Office for Standards in Education (Ofsted) was introduced in 1993 to change more traditional quality assurance functions of inspection (where previously inspection reports were not published at the school level and inspection occurred only very infrequently) to a high-profile accountability mechanism that involved regular inspection of all schools on a three-year cycle. This publicly identified and graded school performance and involved sanctions for schools deemed to be failing, showing serious weaknesses or needing to improve. The threat of closure was introduced for schools deemed to be failing that did not improve sufficiently within a short period of time (two years). Ofsted's self-selected aim was *'improvement through inspection'*.[23] As well as publishing individual schools' inspection reports to inform parents, an annual report commenting on standards of attainment, the quality of education, school leadership and of teaching and learning was published, based on an analysis of all the inspections conducted in a year. Evidence from inspection visits has been used to address topics of policy or practitioner interest, including features of teaching and learning. Ofsted has also issued a number of guidance documents on effective teaching based on inspection evidence.

Key idea: The publication of inspection evidence can provide a major source of evidence on effective teaching that informs practitioners about what practices are considered to be most 'effective', 'high quality' or 'good' and the features of 'unsatisfactory' 'good' and 'excellent' teaching are defined according to the professional judgements of inspectors. Such evidence often provides examples and vignettes to illustrate effective practice observed by inspectors.

Inspectors can evaluate the implementation of national educational policies (e.g. the National Curriculum) and may use regulative mechanisms (e.g. school inspection and self-evaluation systems such as those found in both the UK and Hong Kong) to steer practitioners toward best practices. Inspections often involve classroom observation, as well as the study of samples of students' work, and of schools' performance data to evaluate standards of teaching and learning in schools.

Inspections (e.g. in England, the Netherlands and Hong Kong) are mainly conducted by experienced inspectors over a number of years. These inspectors typically receive regular training and in some systems their judgements are checked for reliability. Therefore, inspection reports and documents can provide a valuable source of evidence on effective teaching practices and on educational standards built on professional judgement and experience, and directly related to the stated aims of an education system. A recent Ofsted report,[24] for example, examines the extent to which the English educational system can match the characteristics that underpin good performance of the most successful education systems identified in an international study. This stresses the importance of maintaining consistency in the quality of teaching of individual teachers and reducing variation within and among schools. Box 1 highlights some overall features of good teaching and good schools based on inspection judgements.

[23] Matthews & Sammons (2004, 2005).
[24] Ofsted (2009a).

Box 1: Key features of good teaching and good schools in England[25]

What good teaching shows:

- Good subject knowledge is an essential prerequisite for good teaching.
- Well-structured lessons share a number of key characteristics.
- The skilful use of well-chosen questions to engage and challenge learners and to consolidate understanding is an important feature of good teaching.
- Effective assessment for learning… is a vital ingredient in good teaching.

What good schools look like – they:

- Establish consistency in teaching and learning across the whole organisation
- Engender a culture of professional debate and developmental lesson observation; share good practice
- Rigorously monitor and evaluate what they are doing
- Stress building good literacy, especially in a child's early years
- In outstanding providers there is a strong focus on the needs, interests and concerns of each individual learner.

Similarly, an earlier inspection report on primary teaching identified a number of general teacher/ teaching features associated with high standards of achievement in England (see Box 2).

Box 2: Key findings in inspections of primary schools in early 1990 in England[27]

What effective teaching looks like in primary schools:

- Good subject knowledge
- Good questioning skills
- An emphasis upon instruction
- A balance of grouping strategies
- Clear objectives
- Good time management
- Appropriate range of teacher assessment techniques
- Well-established classroom routines
- Effective planning
- Good classroom organisation
- Effective use of other adults in the classroom

[25] Barber & Mourshed (2007).
[26] Ofsted (2009a).
[27] Ofsted (1994).

As well as evidence on general guidance on features of effective practice, subject-specific advice has also been produced in Ofsted reports for secondary and primary schools.[28] In addition, guidance on topics such as teaching children with special educational needs, raising the attainment of ethnic minority students, assessment for learning, and effective behaviour management has been published. Case studies of outstanding schools that excel against the odds have also been conducted and highlighted to stimulate school improvement fitting with the idea of learning from and disseminating 'best practice' to improve the education system as a whole. An example of the commentary on teaching and learning in one case study school is shown below.[29]

> Lessons at Bartley Green School demonstrate consistent good practice, evidence of continuing professional development and rigorous performance management. The rapport between teachers and students is very positive, the pace is brisk and activities varied; and students respond promptly and confidently to opportunities to collaborate, solve problems and present ideas to their peers. There are clear and non-negotiable expectations about appropriate behaviour, which are calmly and firmly insisted upon.

The publication of the Framework for inspection and use of contextualised value-added measures provides important checks through making transparent the basis of inspection judgements and recognising the importance of student intake differences in shaping school performance levels.[30]

Annual reports, if based on appropriate national samples of schools, may be able to reflect longitudinal changes in education standards. They can be used to help evaluate the impact of new reforms (e.g. in England Ofsted conducted special inspections to evaluate the use of the National Strategies in primary schools, to identify the features of effective teaching in challenging (disadvantaged) contexts, to identify good practice in assessment for learning and to study the impact of school improvement initiatives such as Academies).[31]

An Ofsted report on good secondary school teaching in subject departments suggested a number of questions for teachers that could be used as the starting points for teacher self-evaluation and departmental or whole-school review (see Box 3).[32]

[28] Ofsted (2002).
[29] Ofsted (2009b: 19).
[30] Teddlie & Reynolds (2000); Sammons (2007).
[31] Matthews & Sammons (2004).
[32] Ofsted (2002).

Box 3: Starting points for self-evaluation[33]

As a subject teacher, do I:

- have a **detailed, up-to-date knowledge of the subject(s)** I teach?
- **maintain my enthusiasm for the subject by being a learner as well as a teacher**, both within the classroom and beyond it, and can I use that subject enthusiasm to motivate and inspire pupils?
- regularly offer to my pupils models of good performance in all aspects of the subject, to **clarify my expectations and raise their aspirations?**
- **plan lessons and units of work to ensure continuity in learning** and steady progress for pupils in the required knowledge, skills and understanding by building new work onto what has gone before and balancing new material or ideas with reinforcement?
- plan lessons that are varied, starting in ways that **engage pupils' interest, intellect or creativity** and using a range of groupings, activities and appropriate resources to maintain that interest?
- **make clear the intended learning in my lessons?** Do I match it to pupils' prior attainment and assessed aptitude, and both communicate these intentions to pupils and review with them the extent of their learning?
- wherever feasible, look for opportunities for pupils to undertake investigations, solve problems or analyse and evaluate ideas? Do I **encourage pupils to be exploratory and critical**, rather than passive recipients of information?
- **use questioning skilfully to probe and extend pupils' thinking** in ways well matched to their level of attainment in the subject?
- **give pupils sufficient time for reflection**, thought and even puzzlement?
- **recognise 'practical' work as integral to learning for pupils of all abilities**, but ensure that it is linked to analysis and evaluation?
- **mark and assess pupils' work** as helpfully as is practicable, offering informative feedback? Do I use criteria, marks or grades that are understood by pupils? Do I provide a clear indication of what has been done well and where improvement is needed?

Increasing emphasis has been given to encouraging school self-evaluation and review in recent inspection publications in England. Although inspection can provide an authoritative source of evidence on good practice, there have been many criticisms of the high-stakes accountability system used in England, and arguments that this tends to reduce teachers' freedom to be creative and so may damage their professional autonomy. Inspection is also claimed to have added to teachers' and schools' workload, increased stress on teachers and decreased job satisfaction. Having said this, there is much evidence that inspection has helped to raise educational standards in combination with other education reforms.[34]

Since 1997, inspection evidence in Hong Kong has been checked against a set of performance indicators, among which three have direct relevance to teaching. Interestingly, Hong Kong has chosen not to publish its individual school inspection reports, in contrast to the high-profile approach adopted in England. In Hong Kong these performance indicators and their associated reflective questions have provided guidelines for teachers and schools for self-evaluations (see Table 3).[35]

[33] Ofsted (2002: 73-4).
[34] Gray (2000); Matthews & Sammons (2005); Sammons (2008).
[35] Quality Assurance Division, Education Bureau (2008: 19).

Table 3: Performance indicators and reflective questions intended to promote better quality of teaching in Hong Kong

Performance indicators	Reflective questions for teachers
Teaching organisation	*How do teachers design their teaching content and adopt teaching strategies according to their teaching objectives and students' abilities?*
Teaching process	*Are teachers' communication skills effective in promoting student learning?*
Feedback and follow-up	*Are teachers able to provide appropriate feedback to students to help them improve?*

These performance indicators are positioned under a set of rationales specifying what a teacher *should* do to achieve effective teaching (see Box 4). However, since there is no official benchmark or standard set for primary schools in Hong Kong, and there is no public channel for analysing or disseminating inspection reports, it is not clear to what extent Hong Kong teachers can draw on inspection data for improving their practices.

Box 4: The rationales used in Hong Kong that specify what a teacher should do[36]

1. Teachers should adopt *a student-centred approach* and lucid teaching objectives, appropriate teaching strategies and resources to promote class interaction and help students to construct knowledge.
2. Teaching should stimulate thinking, develop students' potential and foster their learning ability. *Appropriate attitudes and values* are also fostered in the process.
3. Teachers should cater for the needs of different learners, offer suitable feedback and, at the same time, enhance their confidence and interest in learning.
4. Teachers should extend student learning through providing *life-wide learning opportunities*.
5. Schools should strive for *student autonomy* in the learning process by encouraging them to actively engage in sharing, collaboration and exploration, thus enabling them to enjoy learning, enhance their effectiveness in communication and develop their creativity and sense of commitment.

[36] Quality Assurance Division, Education Bureau (2008: 6).

Teachers' perceptions

Teachers' perceptions of what constitutes high quality or effective teaching are often collected in surveys, instruction logs,[37] and interviews.[38] Such logs and their validity and reliability have been questioned because studies tended to fail to pinpoint the relative significance of specific practices over time.[39] It seems that the teachers and researchers do not consistently interpret the key terms and in the same way.[40]

As well as finding out what factors teachers think constitute effective teaching practices, it is also of interest to establish how teachers perceive their own effectiveness and whether this changes over time. Do more experienced teachers perceive that their own effectiveness improves over the course of their career? What factors influence their perceptions of their effectiveness?

A more global perception as a measure of teachers' perceived effectiveness (i.e. self-perception of teachers of their own practice) and a measure of relative effectiveness based on value-added analyses of pupil progress were used to study teacher effectiveness in a study of 'Variations in teachers' lives and work and their effects on pupils (VITAE)'.[41] This VITAE research found that teachers' effectiveness is not simply a consequence of age or experience. Indeed, they identified mid-career teachers as tending to show greater effectiveness with some decline for teachers who had been in post for longer periods. Some other cross-sectional studies at different levels of education also suggest that teaching effectiveness eventually tends to decline with longer experience/older age. Instead, it was found that teacher effectiveness is influenced by variations in their work, lives and identities that shape their sense of professional identity in different professional life phases. In turn, teachers' sense of professional identity influences their relative commitment and resilience as well as their capacities to manage these variations to sustain their teaching effectiveness.

These findings are important in two ways. First, they suggest that studies that simply control for age and teaching experience would miss important roles of personal, situated and contextual factors that help to shape teachers' professional identities and their capacities to manage variations and sustain their effectiveness over the course of their teaching careers. Second, the results suggest that we should not view teacher effectiveness as an isolated characteristic of the teacher, but a consequence of many interacting factors. This research suggests that a teacher may be more or by contrast less effective in different circumstances and at different times, and thus there is a need to examine the factors that affect teachers' observed teaching behaviours, their overall teaching effectiveness, and their variation and stability over time.[42] Of particular interest is research that helps us to understand what factors help teachers to change and improve their classroom practice in line with behaviours and processes that the literature has shown tend to characterise effective teaching. The VITAE research suggests that school leadership, professional development and support from colleagues can be important in sustaining teachers' professional identities, their job satisfaction, commitment to teaching, resilience and perceived effectiveness.

[37] However, Camburn & Barnes (2004) found that teacher and researcher reports did not always correspond, raising the question of validity as well as differences in values, understanding, interpretation and evaluation.
[38] E.g. Ball & Rowan (2004) and Day et al. (2008) use interviews to help explain and verify findings from other measures.
[39] Little, Goe & Bell (2009).
[40] Ball & Rowan (2004), Blank, Porter & Smithson (2001), Mullens (1995).
[41] Day et al. (2007, 2008).
[42] For stability of teacher effectiveness over years see Marsh (2007a and b); Marsh & Hocevar (1991b); Rosenshine (1970).

The literature discussed so far largely reflects Western perspectives of what constitutes teacher effectiveness. It is appropriate to address non-Western cultural impacts on the conceptualisations of teacher effectiveness. In a study based on interviews used to elicit Chinese teachers' conceptions of teaching (Table 4),[43] the emphases on the role of the teacher and exam preparation are found to be strong, respectively reflecting the traditional role model figure of the teacher and the examination-oriented education system in the East. The emphases on attitude promotion and conduct guidance are also deeply rooted in the Confucian philosophy. Further studies in different cultural contexts are needed to examine variations in teachers' views and understanding of what it means to be an effective teacher and how far the current educational knowledge base on effective teaching practices is generalisable in different contexts. A major comparative study involving more than 19 countries has been used to further understanding of effective classroom practices and will be discussed in a later section.[44]

Table 4: Conceptions of teaching identified from analyses of interviews with Chinese teachers[45]

	Learning and learner	Nature of teaching	Role of teacher	Expected outcomes	Teaching content	Methods of teaching
Knowledge delivery	Acquiring knowledge and skills; passive receivers	Delivering knowledge and skills	Deliverer and resource provider	Accumulation of knowledge and skills	Follows the textbook closely	One-way lecturing plus demonstration
Exam preparation	Achieving exam requirements, achievers, competitive	Preparing for examinations; drilling students	Trainer and director	High exam achievement	Conducted by the 'baton of exams'	Classroom drilling, effective for preparing for exams
Ability development	Internal construction; explorers, capable, flexible and creative	Facilitating learning	Guide, leader, and facilitator	Developing understanding and ability, knowing how to learn	Meets the needs of students and matches students' level	A variety of methods, emphasises activities and interactions
Attitude promotion	Establishing good attitude	Promoting and fostering good attitude	Model of good learner with good attitude	Active and independent in learning	Contained implicitly in teachers' performance	Interactive and interesting; indirect manner
Conduct guidance	Self-improvement	Facilitating and guiding good conduct	Role model of good conduct, friend of students	Qualified persons with good conduct	Related materials, contained implicitly in teachers' behaviours	Friendly and interactive; indirect manner

[43] Gao & Watkins (2001).
[44] Teddlie et al. (2006).
[45] Adapted from Gao & Watkins (2002: 64).

Students' perceptions

Although students are the major stakeholders, some authors have expressed scepticism about the appropriateness of using student ratings as a source of evidence about teachers' classroom practice. Such authors stress students' general lack of knowledge about the full context of teaching and raise concerns that students' ratings of individuals may be unduly affected by students' views of teachers' personalities or by students' own grades. However, the validity and reliability of using students' course evaluations to understand teacher effectiveness has been established in a number of studies in various countries,[46] based on various measures.[47] For example, in Students' Evaluation of Education Quality (SEEQ), there are items measuring the instructor's enthusiasm *(Instructor was enthusiastic about teaching the course)*, organisation *(Course materials were well prepared and carefully explained)*, group interaction *(Students were encouraged to participate in class discussions)*, or individual rapports *(Instructor had a genuine interest in individual students)*. These items closely match items found in other measures used to study different dimensions of teaching in research mentioned in the Measurement challenge section. However, it is uncommon for surveys of students' views to focus only on instruction in the classroom, they may also include what the teacher/instructor does outside the classroom or after the lectures (e.g. items such as: *Feedback on examinations/graded materials was valuable; or: Required readings/texts were valuable*).[48]

Key question:
How can the students' perspectives on effective teaching be incorporated into the work of schools and teachers in your educational context?

Research has indicated those students' evaluations of university teachers can identify clear dimensions related to effectiveness of teaching[49] and stability over years,[50] and were more reliable than ratings given by principals and teachers themselves.[51]

Examples of some selected questionnaire items used in the form of a 5-point rating scale from 'Strongly agree' to 'Strongly disagree' are shown below from a survey of primary students aged 10–11 years in England. These focus on features of teaching and behaviour management.[52]

My teacher makes lessons interesting.

My teacher is pleased when we work hard.

We do a lot of different things in our lessons.

My teacher tells us when we've done good work.

My teacher helps me with my work when I ask for help.

I often find the work too easy in class.

My teacher gets the class to behave well.

My teacher is always there at the start of lessons.

My teacher is not pleased if pupils are late for lessons or school.

My teacher tells us off when we make mistakes with our work.

[46] Baker (1986); Follman (1992, 1995); Kyriakides (2005); Marsh (1984, 1987); Patrick & Smart (1998); Worrell & Kuterbach (2001); Wilkerson et al. (2000). It is found to enhance teaching quality when it is used with expert consultation (Murray, 1997). Cf. Shirbagi (2007) in an Iran context.
[47] E.g. Students' Evaluation of Education Quality (SEEQ) by Marsh (1982); Teacher Evaluation Questionnaire by University of Queensland Tertiary Education Institute (Moses, 1986); Course Experience Questionnaire by Ramsden (1991).
[48] Marsh (1982) and its application at the University of Saskatchewan, Canada.
[49] Marsh (1984, 2007b); Marsh & Bailey (1993); Marsh & Cheng (2008); Marsh & Hocevar (1991a).
[50] Marsh & Hocevar (1991b); Marsh (2007a).
[51] Wilkerson et al. (2000).
[52] Sammons et al. (2008).

Other ways of listening to the student 'voice' and encouraging active engagement of students in the educational process are becoming popular in various education systems including small-group interviews with students, students engaging in their own action research in schools, students giving teachers feedback on their lessons and student involvement in teacher selection interviews.

Principals' perceptions

In some countries one of the duties of the principal is to monitor the quality of teaching and learning in their schools and this can involve conducting classroom observations – either themselves or via heads of department or others in the senior leadership team. However, it can be argued that principals' ratings of teacher behaviours may be biased because they are especially susceptible to differences in the power relations between teachers and principals. Studies in the US found significant district variations.[53] Mixed results were obtained in studies linking subjective principal ratings of teachers and value-added scores of student achievement.[54] For teacher evaluation purposes, a peer teacher or content expert like the subject department head or a Local Authority adviser or inspector may be in a better position than the principal to make informed judgements,[55] indicating that expert knowledge of the person rating may be crucial. In the section on Observation later in the review (see 'The Measurement challenge'), more details are given on the use of different instruments and how teacher observation may be used to enhance classroom practice.

[53] Brandt et al. (2007); Heneman et al. (2006).
[54] Harris & Sass (2009); Jacob & Lefgren (2005, 2008); Medley & Coker (1987); Wilkerson et al. (2000).
[55] Stodolsky (1990); Yon, Burnap & Kohut (2002).

The Characterisation challenge

The ultimate aim of characterising effective teaching practices involves identifying the generic features and dimensions of effective teaching, measuring the relative impacts of teacher effects on students' learning outcomes, and establishing the relative influence of contextual conditions that may influence teacher effectiveness. The first task begins with summarising results of research that sought to provide profiles of effective teachers and effective teaching.

General profiles of effective teachers and effective teaching

A large number of reviews have synthesised research findings on effective teacher behaviours.[56] These reviews indicate some consensus in TER about broad features of what an effective teacher would look like. Effective teachers have been found to be 'semi-autonomous professionals' who are thoughtful and reflective about their practice (see Box 5).

Box 5: A general profile of effective teachers[57]

Effective teachers:

- are clear about instructional goals
- are knowledgeable about curriculum content and the strategies for teaching it
- communicate to their students what is expected of them – and why
- make expert use of existing instructional materials in order to devote more time to practices that enrich and clarify the content
- are knowledgeable about their students, adapting instruction to their needs and anticipating misconceptions in their existing knowledge
- teach students meta-cognitive strategies and give them opportunities to master them
- address higher- as well as lower-level cognitive objectives
- monitor students' understanding by offering regular appropriate feedback
- integrate their instruction with that in other subject areas
- accept responsibility for student outcomes.

In contrast, ineffective classroom practices show different characteristics, outlined in Box 6.

[56] For example, Bloom (1976); Brophy & Good (1986); Gage (1978); Glass (1977); Good, Biddle & Brophy (1983); Light & Smith (1971); Rosenshine (1971); Walberg (1986); Wittrock (1986).
[57] Porter & Brophy (1988: 75).

Box 6: Characteristics of ineffective classroom practice[58]

- Inconsistent approaches to the curriculum and teaching
- Inconsistent expectations for different learners that are lower for disadvantaged students from low SES families
- An emphasis on supervising and communicating about routines
- Low levels of teacher-student interactions
- Low levels of student involvement in their work
- Student perceptions of their teachers as not caring, unhelpful, under-appreciative of the importance of learning and their work
- More frequent use of negative criticism and feedback.

A comparison of teaching characteristics in effective primary schools in England[59] and secondary schools in the US[60] in Table 5 reveals some similarities of these teaching behaviours and the possibility of categorising them. The fine-grained behaviours of effective teachers in most reviews of teacher profiles seem to be widely applicable, as they are evident in research conducted in a number of different countries.[61]

[58] Stoll & Fink (1994).
[59] Mortimore et al. (1988: 227-31).
[60] Doyle (1987: 95).
[61] See Creemers et al. (2002).

Table 5: Comparing and classifying the teaching characteristics of effective teachers

Aspect	Effective teaching in primary	Effective teaching in secondary
Structuring	Teacher is responsible for ordering activities during the day for pupils, i.e. structured teaching	Emphasises academic goals; makes [goals] explicit and expect pupils to be able to master the curriculum; carefully organises and sequences the curriculum
Delivery	Spends greater amount of time communicating with pupils about the content of their work, but not routine matters	Clearly explains and illustrates what pupils are to learn
Management	Keeps a lower level of noise and movement in pupils	
Interaction	Maintains high levels of interaction with the whole class	
Focus	Keeps a fairly narrow focus within individual sessions	Corrects mistakes and allow pupils to use a skill until it is over-learned and automatic; gives pupils ample opportunity to practise
Questioning	Spends more time on asking questions, particularly high-order questions; provides ample, challenging work	Frequently asks direct and specific questions to monitor pupils' progress and check their understanding
Student involvement	Maintains high levels of pupil involvement in tasks appropriate for their levels of ability	
	Lets pupils have some responsibility for their work and independence in these sessions	Reviews work regularly and holds pupils accountable for their work
Emotive and cognitive feedback	Has high levels of praise and encouragement	Gives prompts and feedback to ensure success
	Keeps a positive atmosphere in the classroom	

In addition to the above, studies also show that socio-economically disadvantaged students benefited more when the teaching is structured and promotes cognitive attainment in the basic skills.[62] We will discuss this aspect further in the next section. In a review on educational effectiveness and equity, the roles of communication, assessment and feedback are also highlighted.[63] While assessment and feedback can be both descriptive and evaluative, they can enhance the development of metacognition in the student through the teacher's feedback to students on ways to improve their learning outcomes. The review of assessment for learning provides further details on these aspects.[64]

Various studies of effective teachers and effective teaching in Hong Kong[65] have shown many similarities such as in classroom management and classroom climate[66] with the Western studies discussed above, but also indicated contrasting characteristics. For example, the effective teacher is seen as a figure of authority, morality and benevolence, conforming to the Confucian concept of 'ren'[67] and the social hierarchy of teachers in Chinese society.[68] It is also noted that the features of effective teaching in Hong Kong address the learning processes understood to be important in the cultural context of Chinese learners in their focus on providing many structured tasks, drills and memorisation of materials before deep learning is addressed; plus a very strong priority is given to promoting students' attainment in external examinations and tests by teachers in the Chinese culture context.[69]

Key question:
How does cultural context influence interpretations of what makes an effective teacher in my system?

Characterisation and categorisation of effective teaching practices

Going beyond profiling effective teachers, some researchers have attempted to systematically categorise different teaching behaviours and analyse the links between these categories and student achievement. Therefore, in addition to the extensive research on general teaching behaviour, much has been written about specific *effective teaching skills*,[70] *different teaching styles*,[71] and *different models of teaching*, which specify particular types of learning environment and approaches to teaching.[72] These studies have shown that variations in teaching behaviours contribute much to teachers' effectiveness in the classroom. In addition, they reveal a high degree of consensus concerning the *generic features of effective teaching*.[73]

[62] Scheerens (1992); Muijs & Reynolds (2005).
[63] Sammons (2007).
[64] Flórez & Sammons (2013).
[65] Bailey et al. (1992); Cheung, Cheng & Pang (2008); Jin & Cortazzi (1998); Pratt et al. (1999).
[66] Cheung, Cheng & Pang (2008).
[67] Jin & Cortazzi (1998).
[68] Pratt et al. (1999).
[69] Pratt et al. (1999).
[70] E.g. Clark & Peterson (1986); Kyriacou (2007); Muijs & Reynolds (2005); Philpott (2009), Wragg (1984).
[71] E.g. Bennett (1976); Galton, Simon & Croll (1980); Opdenakke & Van Damme (2006).
[72] E.g. informational processing models, behavioural systems family models, personal family models; see Joyce, Weil & Calhoun (2005); Joyce, Calhoun & Hopkins (2008).
[73] E.g. Bennett (1988), Bickel & Bickel (1986); Good & Brophy (1999); Harris (1998); Mortimore et al. (1988); Rosenshine (1983); Walberg (1986, 1990); Wang & Walberg (1991).

Such characterisations or classifications reveal that how teaching behaviours are grouped may be subject to philosophical orientations. The most notable example is the debate that contrasts the relative effectiveness of the teacher-directed (or explicit) instruction and student-centred constructivist approaches to teaching. The philosophy of constructivism has been given a high priority in the content of teacher education courses and school systems in many Western countries. Constructivist approaches to teaching literacy have been given various names including whole language teaching, anchored instruction, situated learning, discovery learning, task-based learning and scaffolding, problem-based learning, and issue-based learning.[74] Constructivism has been linked to new approaches such as assessment for learning (AfL), although providing clear and constructive feedback on how to improve work can also be seen as an important feature of an alternative approach, termed Direct Instruction. A number of reviews provide evidence for the stronger positive effects of teacher-directed approaches (i.e. direct instruction) in promoting student learning attainment gains especially for younger ages and more disadvantaged groups of students.[75]

Key idea: Direct teaching and good interaction are as important in group work and paired work as they are in whole class work but organising students as a whole class for a significant proportion of a lesson helps to maximise their contact with the teacher so every student benefits from the teaching and interaction for sustained periods of time.

In England the National Literacy and National Numeracy Strategies adopted in primary schools were inspired by reviews of TER and the Direct Instruction model. They emphasised the importance of teachers spending as much time as possible in direct teaching and questioning of the whole class, a group of students or individuals. This led to a focus on interactive whole class teaching for at least some part of daily numeracy and literacy lessons especially at the beginning and ends of the lessons. An interactive whole class 'plenary' session was seen as particularly important for reviewing, reflecting, consolidating teaching points and representing work covered in the lesson to check all students' understanding.[76] Features regarded as important in Direct Instruction, particularly as part of interactive teaching include: Directing learning (including sharing learning goals/objectives with students), Instructing, Demonstrating, Explaining and illustrating, Questioning and discussing, Consolidating, Evaluating students' responses, and Summarising and reviewing learning particularly in closing a lesson.

Research on Direct Instruction indicates that learning can be greatly accelerated if instructional presentations are clear, minimise misinterpretations and facilitate generalisations. The principles upon which such approaches are based include:

- All children can learn, regardless of their intrinsic and context characteristics.
- The teaching of basic skills and their application in higher-order skills is essential to intelligent behaviour and should be the main focus of any instructional programme, and certainly prior to student-directed learning activities.
- Instruction with students experiencing learning difficulties must be highly structured and permit large amounts of practice.[77]

[74] Rowe (2006).
[75] Galton et al. (1980); Mortimore et al. (1988); Muijs & Reynolds (2000); Rowe (2006).
[76] Muijs & Reynolds (2000).
[77] Rowe (2006: 5).

Nonetheless, it is argued that the Constructivist and Direct Instruction approaches can both be used and do not have to be seen as necessarily in conflict. Both can have value depending on the purposes of the lesson and the characteristics and prior skills of the learner. The choice and balance depends on the goals of the teacher for a particular lesson and group of students:

The relative utility of direct instruction and constructivist approaches to teaching and learning are neither mutually exclusive nor independent. Both approaches have merit in their own right, provided that students have the basic knowledge and skills (best provided initially by direct instruction) before engagement in 'rich' constructivist learning activities. The problem arises when constructivist learning activities precede explicit teaching, or replace it, with the assumption that students have adequate knowledge and skills to efficiently and effectively engage with constructivist learning activities designed to generate new learning.[78]

Key questions:
How well do the features of Direct Instruction approaches and interactive whole class teaching fit with current teacher practices in my system?

What is the appropriate balance between Constructivist and Direct Instruction /interactive whole class teaching?

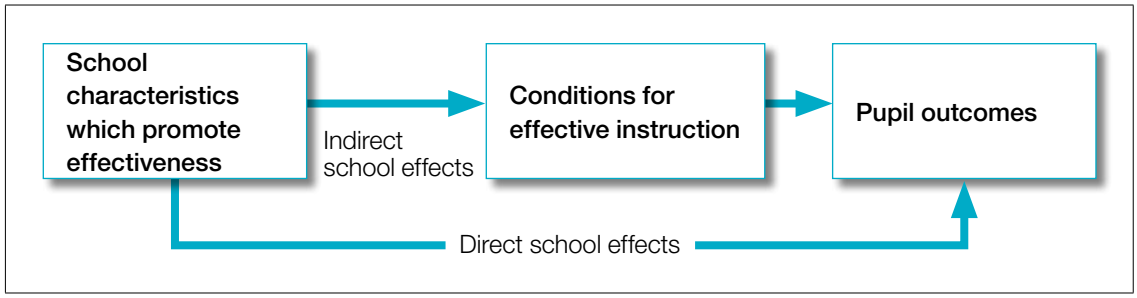
What are the advantages and disadvantages of both approaches?

The primacy of teacher effects and the relative effectiveness of teacher variables

As early traditional TER predominantly focused on teacher effects on student learning outcomes, other contextual variables in the school, the community, and education system tended to be ignored.[79] The debate on the impacts of socio-economic factors on learning outcomes and the concerns on equity led to the rise of SER (school effectiveness research).[80] As teachers work in schools, schools can influence teacher effectiveness through different effectiveness-enhancing conditions, but may also have direct impacts on pupil outcomes, as depicted in Figure 1, following.

[78] Rowe (2006: 14).
[79] For a historical account, see Campbell et al. (2004).
[80] Sammons (2007).

Figure 1: Step-by-step causal process with school and instruction conditions as malleable factors[81]



Various school-level factors have been identified in several post-1990 reviews.[82] However, although many researchers found that the profiles of effective schools also shown that characteristics of effective classroom processes contributed to fostering pupils' learning and progress, much of the research evidence to date on educational effectiveness suggests that: *while schools can make a difference to student achievement, the most substantial portion of that difference may be attributed to teachers.*[83]

Box 7 shows the statement of a review on the relative significance of teacher and school effects, which confirms the primacy of teacher effect, how teacher effects can accumulate over several school years and how students of the most effective teachers benefited.

Box 7: Relative significance of teacher and school effects and the cumulative effects[84]

Of all the contextual variables that have been studied to date (indicators of socio-economic status, class size, student variability within classrooms, etc.), the single largest factor affecting academic growth of populations of students is differences in the effectiveness of individual classroom teachers. Also, the effects of teachers appeared to be cumulative. At the extreme, a high-high-high sequence [of 3-year teacher effects of 5th grade pupils] resulted in more than a 50 percentile point higher score in 5th-grade maths achievement than the low-low-low sequence... As the level of teacher effectiveness increased, students of lower achievement were the first to benefit, and only teachers of the highest effectiveness generally were effective with all students.

[81] Adapted from Scheerens & Bosker (1997:147).
[82] Cotton (1995); Levine & Lezotte (1990); Marzano (2003); Sammons, Hillman & Mortimore (1995); Scheerens & Bosker (1997).
[83] E.g. Creemers (1994); Creemers & Kyriakides (2008); Hill & Rowe (1996, 1998); Konstantopoulos (2007); Kyriakides & Creemers (2008a, 2008b); Nye, Konstantopoulos & Hedges (2004); Muñoz & Chang (2007); Sammons et al. (1997); Sanders (1998, 2000); Scheerens et al. (1989); Tymms (1993).
[84] Sanders (1998: 27). It should be noted that a similar cumulative school effect was also found in English primary schools (Mortimore et al., 1988).

Similarly, another review of the educational effectiveness evidence in the US[85] concluded that as the major determinant of differences in student learning, differential teacher effectiveness outweighs the effects of differences in class size and class heterogeneity. Efforts to assess teacher effectiveness in the US have sought to use value-added models based on student test scores. However, there are many concerns about using value-added methods to judge individual teacher performance for accountability purposes because fine (rank order) distinctions are not statistically valid.[86]

The relatively stronger impacts of teacher and classroom factors than of school factors on student achievements are also evident in meta-analyses. A meta-analysis synthesising over 800 studies relating to the influences on achievement in school-aged students[87] shows that in the top thirty most influential variables out of a rank of 138 variables affecting student achievement, nineteen variables related to teachers or teaching with an effect size above 0.5 (see Table 6).

Table 6: 31 teacher and teaching factors with mean effect-sizes over 0.5[88]

Teacher/teaching factors	Effect size	Domain
Provide formative evaluation	.90	Teaching
Micro-teaching	.88	Teacher
Comprehensive interventions for learning disability students	.77	Teaching
Teacher clarity	.75	Teaching
Reciprocal teaching	.74	Teaching
Feedback	.73	Teaching
Teacher-student relationships	.72	Teacher
Spaced vs. mass practice	.71	Teaching
Meta-cognitive strategies	.69	Teaching
Self-verbalisation/self-questioning	.64	Teaching
Professional development	.62	Teacher
Problem-solving teaching	.61	Teaching
Not labelling students	.61	Teaching
Teaching strategies	.60	Teaching
Cooperative vs. individualistic learning	.59	Teaching
Study skills	.59	Teaching
Direct instruction	.59	Teaching
Mastery learning	.59	Teaching
Worked examples	.57	Teaching
Concept mapping	.57	Teaching
Goals	.56	Teaching
Peer tutoring	.54	Teaching
Cooperative vs. competitive learning	.54	Teaching

[85] Darling-Hammond (2000).
[86] McCaffrey et al. (2004); Darling-Hammond et al. (2010).
[87] Hattie (2009).
[88] Adapted from Hattie (2009: 297-8).

Differential departmental and school impacts on teacher effects

As the immediate working contexts of teachers, departments may contribute more and directly to differential teacher effectiveness than schools.[89] Schools generally vary in teaching effectiveness for different subjects. The subject inconsistency in results within, as well as between, schools seems to be larger in secondary schools than primary schools.[90] Eight school processes were identified that explain differences in the effectiveness levels of schools and departments (see Box 8).

Box 8: School processes identified to explain the (in)effectiveness of schools and departments[91]

- Productive climate and culture
- Focus on central learning skills
- Appropriate monitoring
- Practice-oriented staff development
- Professional leadership
- Parental involvement
- Effective instructional arrangements
- High expectations

Regarding the relative significance between the department effect and school effect, results suggest a strong impact of departments but more variation from year to year. Typically most schools were found to contain both effective and ineffective departments, emphasising the importance of studying within-school variation and reducing this to promote overall school improvement.[92] Key factors cited by heads of department in judging departmental effectiveness include:

- Quality of the teaching in the department
- Extent to which departmental staff work together as a team
- Commitment/enthusiasm of teaching staff
- High staff expectations of students
- Prior attainment of students (at intake to school)
- The extent to which independent student learning is fostered
- Examination results.[93]

The first three factors highlighted the significance of consistency and quality of teaching in the department. Similarly, in reviewing the relative school and teacher effects in the literature, consistency in teacher effectiveness in the department is stressed.

[89] E.g. Ainley (1994), Harris, Jamieson & Russ (1995); Luyten (1994); Sammons et al. (1997); Witziers (1994).
[90] Scheerens & Bosker (1997); Sammons (1999).
[91] Scheerens & Bosker (1997: 214).
[92] FitzGibbon (1991), based on the multilevel results of the Scottish system.
[93] Sammons et al. (1997: 112).

Key idea: These findings strongly imply that a good education for all students will be best attained by close monitoring of departments. What can be learned from the most consistently effective departments and what actions are needed to improve consistently underperforming departments?

However, the school effect should not be neglected – some secondary schools provided a more supportive environment for departments to be effective whereas in other schools it was 'harder' for departments to be effective due to lack of overall leadership, shared goals and vision, poor expectations and inconsistent approaches.[94]

In conclusion, research suggests a need to address teacher effectiveness within a departmental context and to explore consistency in the quality of teaching in the department across different years and grade levels.

[94] Sammons et al. (1997: 145).

The Measurement challenge

One lesson learned in the International School Effectiveness Research Project (ISERP) was that there were few agreed international constructs concerning teaching effectiveness.[95] Different instruments may measure different constructs and instruments can vary significantly in their external validity, that is, their applicability in different educational and national contexts. Accordingly, it was recognised that there was a pressing need to develop a classroom observation instrument that would measure some agreed teacher effectiveness constructs.[96] While there are thousands of classroom observation instruments,[97] only few attempts in the literature have used different instruments simultaneously and there is little recent research on this topic.[98] Thus, one of most neglected areas in classroom observation research is using multiple instruments to examine the multidimensionality of teaching practices.

Multidimensionality of teaching practices

Other than experimental studies, naturalistic classroom observation is the major method of enquiry in TER and other different domains of educational research. There are theoretical links between SER/TER and teacher evaluation because classroom observations using variables from the TER literature may inform teacher evaluation, staff development, teacher development, and eventually teacher and school improvement.[99] However, developing valid and reliable instruments is not easy. For example, early research[100] using classroom observation evidence to characterise teacher styles proved problematic.[101]

The Mathematics Enhancement Classroom Observation Record (MECORS),[102] a classroom observation instrument previously validated in the US,[103] was used in England and a seven-factor model of effective teaching behaviours was identified.[104] It was found that whole-class teaching creates the conditions for effective teaching to occur but did not directly affect pupil progress. The researchers also concluded that effective teachers would tend be effective in most or all aspects because they found strong correlations among different dimensions of teaching observed.

[95] Reynolds (2006).
[96] Darling-Hammond and colleagues (2010: 88).
[97] The anthology of 92 classroom observation instruments with detailed accounts edited by Simon and Boyer (1967-1970) runs up to 14 volumes. Another single volume sourcebook, Borich and Madden (1977), described only 10 instruments that specifically aim at obtaining information about the teacher from an observer. A dated UK anthology by Galton (1978, 1979) consisted of 41 instruments – see Meehan et al. (2004) for details.
[98] E.g. Emmer & Peck (1973); Ober, Wood, & Cunningham (1970); Wood, Brown, Ober & Soar (1969).
[99] Teddlie et al. (2003).
[100] E.g. Galton et al. (1980); Galton & Simon (1980); Galton (1995); Galton et al. (1999).
[101] Mortimore et al. (1988) noted that variance within styles was far greater than variance between styles.
[102] This is a modified version of the classroom observation schedule Special Strategies Observation System (SSOS) by Schaffer, Nesselrodt and Stringfield (1991), as cited in Meehan et al. (2004).
[103] Schaffer et al. (1998) as cited in Muijs & Reynolds (2000).
[104] Muijs & Reynolds (2000).

Measuring with two instruments and other measures

Two instruments, the Instructional Environment Observation (IEO) Scale[105] and the Classroom Observation System for Fifth Grade (COS-5),[106] were used in a recent large-scale longitudinal study of the impact of pre-school and primary school on children's developmental outcomes in England.[107] They were selected because they were devised relatively recently for the primary age group, covering a wider range of pupil and teacher behaviours and offering the opportunity to facilitate comparison with research in other contexts.[108] The underlying dimensions of each instrument are presented respectively in Table 7 and Table 8. Although the IEO covers subscales exploring some common aspects of teacher behaviours like classroom climate or student engagement, it has a strong focus on pedagogical practices associated with learning in Literacy and Mathematics. In contrast, the COS-5 covers the frequency of both teachers' and children's classroom behaviours in six categories of many twenty-minute blocks of observation cycle. This helps to capture the correlations between teachers' and children's behaviours and interactions better.

Table 7: Underlying dimensions of Instructional Environment Observation Scale

Literacy	Numeracy
Pedagogy 1. Classroom climate 2. Classroom routines 3. Social support for student learning 4. Student engagement 5. Instructional conversations	**Pedagogy** 1. Classroom climate 2. Classroom routines 3. Social support for student learning 4. Student engagement
Subject development 1. Higher order thinking in writing 2. Purposeful development of writing skills	**Subject development** 1. Use of maths analysis 2. Depth of knowledge and student understanding 3. Basic skill development in the context of problem solving 4. Maths discourse and communication 5. Locus of maths authority
Learning linkages 1. Cross-disciplinary connections 2. Linkage to life beyond the classroom	**Learning linkages** 1. Cross-disciplinary connections 2. Linkage to life beyond the classroom

[105] Stipek (1999).
[106] NICHD (2001).
[107] For details of the project and findings, see Sammons et al. (2006, 2007).
[108] This contrasts with the previous research; see Galton et al. (1999).

The first of the COS-5 factors to be extracted represents general classroom processes and pedagogy and was termed 'Quality of pedagogy'. This factor is associated with six of the classroom quality measures (see Table 8). Child's 'Disruptive' behaviour, 'Chaos' and 'Negative classroom climate' formed the second factor. This dimension identifies the extent of classroom 'Disorganisation'. High scores are characterised by general chaotic and negative classroom climate and pupils' disruptive behaviour. This clustering indicates that disruptive behaviour and negative or chaotic classroom atmosphere are likely to coincide; however, whether a chaotic atmosphere in the classroom produces disruptive behaviour or whether it is caused by it cannot be ascertained. It seems likely that the two tend to reinforce each other. 'Self-reliance', 'Sociable/cooperative with peers' and 'Child-teacher relationship' converged into the third dimension, suggesting in classes where children are observed to be more self-reliant, they are also more likely to demonstrate the social skills of cooperation. This dimension is referred to as 'Child positivity'. 'Activity level' and child 'Positive affect' formed a fourth factor termed 'Positive engagement' as this clustering indicates that in classes where children are observed to be occupied they are also more likely to be rated as happy.

Finally, the fifth factor to be extracted brought together 'Attention' and 'Over control' into a single dimension termed 'Attention and control'. This is in many respects different from the 'Disorganisation' dimension where 'Chaos' and 'Disruptive behaviour' are replaced by more teacher control and attentive behaviour.

Table 8: Underlying dimensions of Classroom Observation System for Fifth Grade (COS-5): measures of observed quality of classroom practice

Classroom codes measure *Teachers' Classroom Practice and Processes* Child codes measure *Child's classroom behaviours*	
Quality of pedagogy	1. Classroom codes – Richness of instructional method 2. Classroom codes – Detachment/teacher 3. Classroom codes – Positive classroom climate 4. Classroom codes – Productive use of instructional time 5. Classroom codes – Evaluative feedback 6. Classroom codes – Teacher sensitivity
Disorganisation	1. Child code – Disruptive 2. Classroom codes – Chaos 3. Classroom codes – Negative classroom climate
Child positivity	1. Child code – Self-reliance 2. Child code – Sociable/cooperative with peers 3. Child code – Child-teacher relationship
Positive engagement	1. Child code – Positive affect 2. Child code – Activity level
Attention and control	1. Child code – Attention 2. Classroom codes – Over-control

Box 9, following, summarises several key findings identified in the quantitative analyses of the EPPE project. The qualitative field notes completed by classroom observers (trained researchers) were recently analysed and used to complement these findings (Table 9).

Box 9: Key findings from systematic observations in Year 5 classes in the EPPE research[109]

- The observational research identified significant variation in both teachers' classroom practice and pupils' behaviour in class and distinguished between better and poorer quality in the educational experiences of Year 5 pupils.
- Levels of student engagement were found to be relatively high and classroom climates were generally positive. Teacher detachment was generally low and there was little pupil 'off task' behaviour observed.
- Teachers varied in many aspects of their pedagogical practice and classroom organisation (for example the teaching of analysis skills and the extent of emphasis on basic skills) and several important features of observed practices (e.g. related to classroom climate, smooth organisational routines etc.).
- The quality of teaching and pupil response was found to be consistently higher in classes where a plenary was used in both literacy and numeracy lessons and lowest in classes where no plenary was used in either subject.
- Overall teaching quality (defined by factors in the analysis) could be identified and teachers identified as showing mainly high- rather than low-quality practices predicted better student progress in both mathematics and reading.

A measure of overall *Teaching quality* derived from these dimensions was constructed and teachers were grouped in terms of overall quality of practice. This measure of overall *Teaching quality* was a statistically significant and moderately strong predictor of better reading (ES=0.37) and mathematics progress for students (ES=0.35).

In-depth qualitative analyses of field notes were used to distinguish the practice of more effective teachers in observed classroom practice-based on the two instruments described above.

[109] Sammons et al. (2006).

Table 9: A summary of sample descriptions of more effective practice from qualitative analyses of observation field notes in the EPPE research[110]

Teaching aspects	Sample descriptions of more effective classrooms
Organisation	Effective: A well-oiled machine. Happy confident children move easily from one activity to the next Ineffective: Children take a long time to respond and are often late arriving for sets. Teacher does not seem to mind this
Shared goals	Effective: Teacher and children were absolutely clear about what should be happening at all times combined with a commitment on both parts to ensure that goals were achieved Ineffective: Teachers were slow to check – and correct where necessary – their pupils' understanding of key concepts and ideas
Classroom climate	Effective: Very positive feeling. A quiet buzz of work. All respect each other
Behaviour management	Effective: The whole class and all children are on task, but control is established by involving children in their learning
Collaborative learning	Effective: Worked closely with peers, discussing work and approach to the problem
Personalised teaching and learning	Effective: Children were involved in their learning and enjoying the experience. Indicating teacher sensitivity and understanding of children's needs
Making links explicit	Effective: A practical science session investigating sweeteners… totally absorbed all children
Dialogic teaching and learning	Effective: The teacher discusses choice books in a friendly manner – respects the child's opinion re: their choice
Assessment for learning	Effective: Feedback at the individual level and also at class level; there was depth
Plenary	Effective: The plenary allowed children to consolidate their understanding of poetry techniques, to work collaboratively by helping each other to improve and by contributing their own work and to extend their knowledge and skills
Homework	Ineffective: Homework was rarely mentioned in any of the observations of the other schools with low academic effectiveness

[110] Siraj-Blatchford (2010).

The Theorisation challenge

Developing valid instrument(s) to characterise generic teacher effectiveness in different countries

To date, the most extensive results on differential teacher and school effects in different countries using the same instruments were from the report of the ISERP project.[111] Teacher effectiveness of this project was measured with the Virgilio Teacher Behaviour Inventory (VTBI)[112] and QAIT.[113] The findings of this study were enriched by its employment of multiple measures and both quantitative and qualitative measures to triangulate findings. Classroom management, classroom climate and teaching/instruction were the three factors that had statistically significant positive impacts on student academic outcomes in the US, the UK, and Norway. However, this research pointed to the need to develop an International Instrument for Teacher Observation and Feedback (ISTOF). The ISTOF project was intended to create an observation instrument to study the generic characteristics of teacher effectiveness in lessons with a broad external validity for a variety of country and cultural settings. The scale was produced as part of a collaborative, cross-national research initiative involving 21 countries. It involved researchers, practitioners and education advisers/ inspectors, whose expert opinions about what constitutes effective teaching were used to supplement TER evidence to generate the various components in the observation instrument.

The original scale comprises 45 items and seven theoretical components.[114] These 45 items were descriptive statements specifying a particular teacher behaviour (e.g. *Item 1: The teacher makes explicitly clear why an answer is correct or not*). Of the 45 items, two to four items were grouped to represent an indicator that describes a certain dimension of teaching behaviours. As a result, there were 21 indicators (e.g. *Indicator 1.1: The teacher gives explicit, detailed and constructive feedback*), two to four of which were further grouped under one of the seven theoretical components (e.g. *Component 1: Assessment and Evaluation*). Although counting the occurrence of the specific teaching behaviours is not required, the rating is expected to be based on the observed relative frequency of the behaviours without passing judgements on whether the observed behaviour was 'good' or 'poor'.

The Lesson Observation Form for Evaluating the Quality of Teaching (QoT) is another classroom observation protocol developed to be tested internationally.[115] This was a product of the collaboration between the English and the Dutch Inspectorates. Thus, the framework was expected to conform to an inspection model of what constituted effective teaching or good practice based on professional judgements. It consists of evaluative categories of practices based on the experiences of the inspectors and the pre-determined and agreed categories of teaching behaviours and practices originated in TER. However, like ISTOF, QoT was intended to study the generic teacher behaviours in the classroom:

'the standards and indicators [of QoT] must be observable in (almost) each lesson'[116] such that the instrument could be used every time in classrooms in an inspection visit. Inspectors are expected to *rate teachers' behaviours in terms of their perceived effectiveness, rather than their frequency*. The internal consistency, inter-rater reliability and validity of the QoT and its application to identify the quality difference in the teacher strategies were confirmed in a study in England and the Netherlands[117] and later in another study in four areas: England, the Netherlands, Flanders (Belgium) and Lower Saxony (Germany).[118]

[111] Reynolds et al. (2002).
[112] Teddlie, Virgilio & Oescher (1990); Virgilio, Teddlie & Oescher (1991).
[113] The acronym stands for the different subscales: Quality of instruction, Appropriate level of interaction, Incentive, and Time. This is an updated version of Special Strategies Observation Systems (SSOS), Schaffer, Nesselrodt & Stringfield (1994); for details see Meehan et al. (2004).
[114] This is different from the version reported in Teddlie et al. (2006), which only had 43 items.
[115] van de Grift (2007); van de Grift et al. (2004).
[116] van de Grift (2007: 128).
[117] van de Grift et al. (2004).
[118] van de Grift (2007).

Like the original Dutch inspection instrument, the QoT Form comprised a detailed checklist of 26 indicators (e.g. *Indicator 1.1 [The teacher] ensures a relaxed atmosphere*), covering nine criteria (e.g. *Criterion 1: Safe and orderly school climate*) for evaluating the quality of teaching.[119] To facilitate making judgements, each indicator is supplemented with a few corresponding descriptive statements of teaching behaviours provided as good practice examples. Raters are instructed to give a score indicating more strengths than weaknesses only when all good practice examples (if applicable) are observed. The 2004 version of the QoT differed from its Dutch predecessor in its inclusion of an *overall grade* for teaching to reflect an *overall judgement of the lesson quality*, which was a distinctive characteristic of the English inspection model.[120] It was expected that the correlation analysis would indicate which teacher behaviours have the greatest association with the global judgement of teacher effectiveness and eventually a set of indicators suitable for an international comparative analysis of characteristics of effective teaching would be developed.

Contrasting instruments and characterising generic teacher effectiveness

The Effective Classroom Practice (ECP) project in England employed not only the ISTOF (a behavioural instrument), but also the QoT (an evaluative instrument).[121] The ECP explored the underlying dimensions of the observed teaching behaviours of a purposive sample of typical and more effective teachers in England. A report in the study identified two sets of underlying factors that might define effective classroom practices, one for each of the two instruments employed.[122] As shown in Table 10, these underlying dimensions share similar focuses on climate, management, objectives/purposes, and support/feedback.[123]

High scores of their purposive sample of primary and secondary teachers were found in a number of the underlying factors and on particular items. These findings lent support to the generic concept of teacher effectiveness, which holds that effective teachers would excel in the generic characteristics of effective classroom practices.

Table 10: Underlying dimensions found in the ratings using the two instruments (ISTOF and QoT)

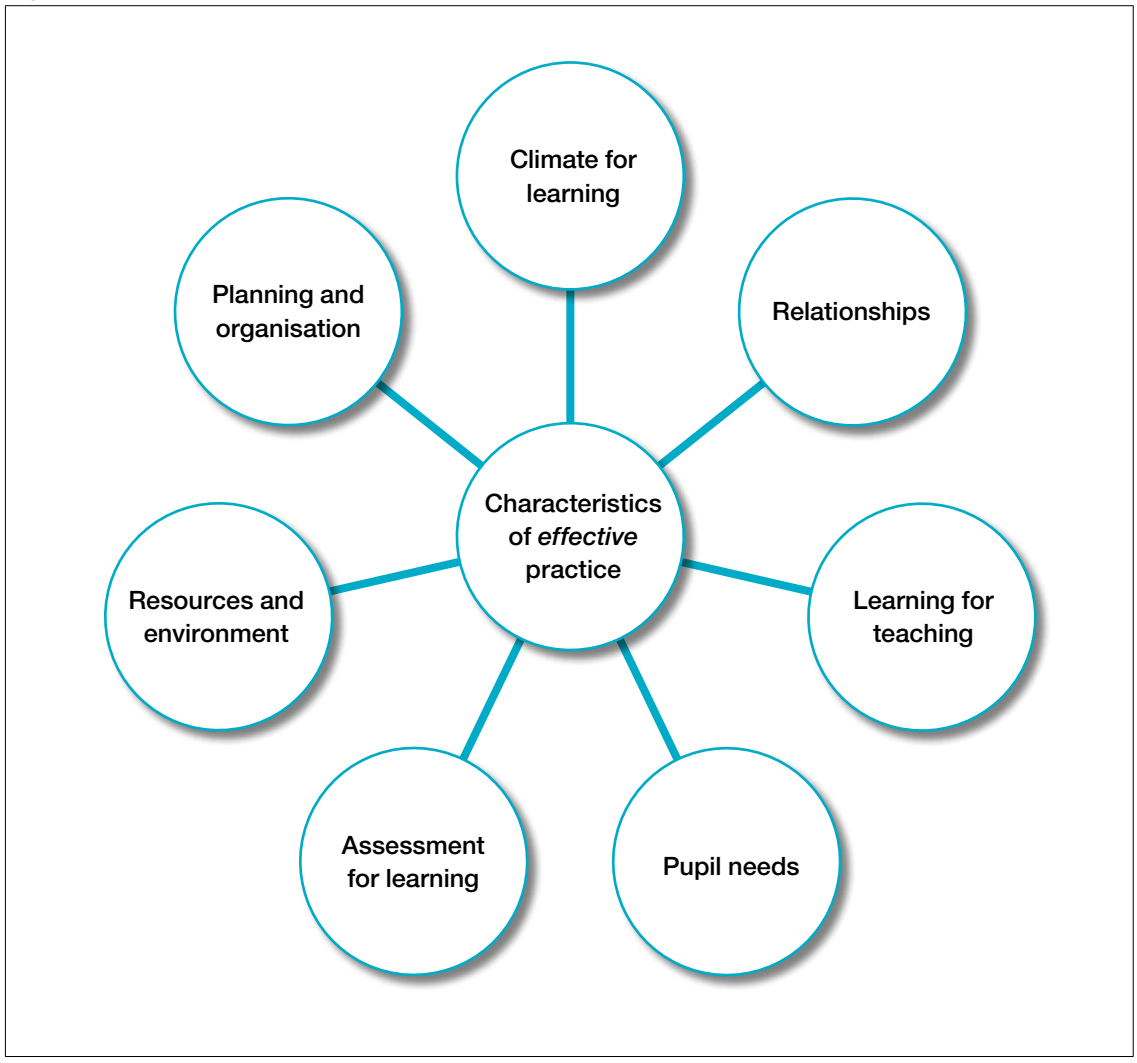
Evaluative instrument	Behavioural instrument
Supportive lesson climate	Clear and coherent lesson in a supportive learning climate
Proactive lesson management	Engaging students with assignments and activities
Well organised lesson with clear objectives	Positive classroom management
Environmental and teacher support	Purposive learning
	Quality questioning and feedback for students

[119] According to van de Grift et al. (2004), the original Dutch instrument only had 23 indicators and seven criteria. This older version is different from the one reported in van de Grift (2007), which has only 24 indicators. The two indicators deleted in the latest version concern the classroom layout (i.e. Indicator 9.1: [The teacher] ensures the classroom layout supports the pupil activities; and Indicator 9.2: The teaching environment is educational and contemporary). This new version was not available prior to the conduction of the ECP study.
[120] van de Grift (2007).
[121] Day et al. (2008); Sammons & Ko (2008).
[122] Sammons & Ko (2008).
[113] Sammons & Ko (2008).

However, the distribution patterns of the factor scores of the various confirmatory factor analysis models of the two instruments shown there was variation across teachers in the sample for most factors, although this was greater in some areas measured than in others. This also provided some support for a differentiated concept of teacher effectiveness in revealing that variation may exist in teachers' teaching behaviours when the students, working environments, and subjects taught are different.

Combining quantitative evidence derived from analyses of the two systematic observation schedules with detailed analyses of teacher interview data, pupil surveys and qualitative field notes, the ECP research sought to distinguish the main features that are important in creating Effective Classroom Practice, as outlined in Figure 2. These features go beyond the specifics of teaching behaviours to cover other important aspects including planning and organisation, understanding of pupil needs, assessment and teacher-pupil relationships. The research also pointed to the role of professional development and support from other colleagues and senior staff in school in supporting the conditions for effective classroom practice.

Figure 2: Characteristics of effective classroom practice



The recently developed classroom assessment scoring system (CLASS)[124] is a tool for observing teachers which also seeks to provide feedback that can help improve teachers' interactions and relationships with students. It was designed with the aim of coupling observations with support. This came from the idea that if teachers' behaviour is indeed an important factor influencing student achievement, a standardised framework for looking at behaviour, considering both the effective and ineffective elements, could prove very useful in improving teachers' practice and in turn improving student outcomes. The instrument covers three major domains – Emotional Supports, Classroom Organisation, and Instructional Supports.

Additionally, more specific dimensions of classroom interactions that are considered to be important to students' academic and/or social development are also described. The domain of Emotional Supports includes three dimensions: positive classroom climate, teacher sensitivity, and regard for student perspectives. Classroom Organisation includes effective behaviour management, productivity, and instructional learning formats; and the Instructional Support domain includes the dimensions of concept development, quality of feedback and language modelling. The observation manuals used for CLASS are highly detailed, with descriptions of each dimension and the behavioural indicators associated with each dimension. In addition, in the manual itself and associated supporting materials, attention is paid to observers' interpretations of behaviour in relation to culture and background.

A key feature of the CLASS system is that it centres observer judgements regarding the relative value of teachers' behaviours or interactions toward students on the basis of how individual students react and how teachers respond to individuals. The observer is trained to look at individual children's cues, teacher responses, and the children's subsequent behaviours based on the premise that the meanings and developmental value of interactions are highly individualised and not based on some group to which the child may or may not belong. Although the basis for any rating is the behaviour between the teacher and child, the CLASS system gathers evidence using a standardised approach that can be applied to large numbers of children and teachers.

Combining qualitative and quantitative approaches to evaluating teacher effectiveness

Value added teacher effectiveness research is primarily quantitative; however, there is an increased recognition of the importance of a qualitative element to further illuminate the statistical data. One research study[125] for example, compared 24 middle school mathematics teachers' value-added scores with survey- and observation-based indicators of teacher quality, instruction, and student characteristics. Evidence was found showing that teachers' value-added scores were positively correlated with expert ratings of their instruction. However, although many teachers were classified similarly by their value-added and observational scores, a minority were not.

It is suggested that, although value-added scores are important and provide a useful tool in assessing teacher effectiveness, they are insufficient on their own to identify teachers for reward, remediation, or removal. The authors recognise that their correlations are in the same range as those of other studies that have investigated the relationship between value-added scores and external criteria; they also point out that there is still disagreement in the categorisation of teachers as effective or not effective. These findings were supported by the case studies, which suggested that high value-added teachers did not necessarily score highly in observations of their teaching.

[124] Pianta & Hamre (2009a & b).
[125] Hill & Matthews (2010: 33).

The Effective Classroom Practice project[126] further supported the idea that value-added scores alone are not sufficient to assess teachers. The project collected and integrated observational datasets for individual teachers. The results indicate that, while there are core classroom competencies in terms of organisation and management, pedagogical context knowledge, pedagogical skills, and interpersonal qualities, they may be enacted differently by teachers in different sectors, year groups, subject groups, and socioeconomic contexts. Overall it is suggested that combining approaches to investigate teacher effectiveness, including value-added measures of student outcomes, observations of classroom practice, measures of teachers' subject knowledge and student ratings of their classroom experiences is helpful. Such triangulation provides a better basis for making judgements about teacher performance and evidence to support teacher self-evaluation.

Key ideas: To promote improved classroom practice a relationship of trust between the observed teacher and the observer is desirable. The observer needs to be seen as a 'critical friend'.

The observer should start by focusing on strong points in a lesson, then point out any less successful elements of a lesson.

The criteria for the observation should be clear and feedback should be constructive and positive.

The observed teacher should contribute to the discussion and have the opportunity to comment on the observations.

Peer observation can often be helpful where teachers take turns to observe each other teaching and give feedback in turn. Feedback should be on observed behaviour that the teacher can change.[127]

[126] Kington et al. (2011); Day et al. (2008).
[127] After Muijs & Reynolds (2011).

Summary and conclusions

The importance of ensuring high quality teaching (defined in terms of impact on student outcomes as in the TER tradition) is illustrated in the following quotation.[128]

> *The effect of poor quality teaching on student outcomes is debilitating and cumulative. … The effects of quality teaching on educational outcomes are greater than those that arise from students' backgrounds. … A reliance on curriculum standards and state-wide assessment strategies without paying due attention to teacher quality appears to be insufficient to gain the improvements in student outcomes sought. … The quality of teacher education and teaching appear to be more strongly related to student achievement than class sizes, overall spending levels or teacher salaries.*

The TER tradition has not attempted to define and identify 'good' or by implication 'bad' teachers but rather to study the size and nature of the teacher effect on student outcomes, to identify and measure variation in teaching practices and to highlight those that promote better educational outcomes for students. In the past, TER focused on a narrower concept of effectiveness in fostering just better academic outcomes for students in the classroom, but gradually TER has extended to examine a teacher's non-instructional roles and measures of students' non-academic outcomes as well. Within this framework, we argue that an emphasis on students' social, behavioural and affective – as well as their cognitive – outcomes is necessary to obtain a rounded picture of teacher effectiveness.

A number of common features of effective teachers and the practices that constitute effective teaching have been identified in a large number of research studies conducted in a range of school settings and countries. TER, therefore, provides an important evidence base on the correlates of effective schools and teachers and the behaviours and classroom processes that predict better outcomes for students. It has stimulated initiatives to strengthen and enhance teacher quality through improvements to initial teacher education and continuing professional development programmes at school, district/local authority and national levels. Quality assurance and accountability processes in various countries are not only aimed at schools but also increasingly at teachers, for example through inspection and the publication of performance data. In some systems, inspection evidence has been informed by SER and TER. It can be used to monitor and provide guidance on the features of effective practice.

This review of evidence has sought to provide guidance on how we can define and measure a teacher's effectiveness and what characterises effective teaching behaviours; and has explored some of the implications for teacher evaluation, teacher self-reflection, school improvement, and school inspection. We conclude that defining teacher effectiveness is not a simple matter. The differentiated teacher effectiveness definition raises the question of whether it is appropriate to think in simple categories such as more effective or less effective teachers or teaching. Do some teachers excel in all aspects of their teaching, or in terms of promoting different outcomes, and with different student groups or in different educational contexts and at all times? In other words, does teacher effectiveness vary over time (from day to day or across the course of their career)? Does it vary when teaching different student groups or in different types of school (e.g. high or low disadvantage student intakes)?

[128] Darling-Hammond (2000: 3).

Research suggests that some teachers may be better at teaching certain subjects, or delivering certain topics or subject areas, or meeting certain teaching objectives. Teacher effects may not be stable but may fluctuate over the school year, across different phases of implementation of an educational policy, across different teaching periods, and across lessons in which observation/assessment has taken place.

There is a need to:

- adopt a broader definition of teacher effectiveness that emphasises the promotion of students' academic, and other kinds of educational, outcomes
- understand that effective teaching is not automatically guaranteed through teacher training, professional development or long years of experience
- recognise that teachers may vary in their effectiveness over time (across years) and in achieving different kinds of student outcomes and in teaching different groups of students or in different school contexts
- disseminate and study relevant research and, where available, inspection evidence on effective teaching practices and evaluate their applicability in different classes and school contexts
- identify and disseminate examples of successful practice from case studies of the work of effective teachers, effective departments and effective schools, through appropriate guidance and learning networks
- pay attention to the influence of other factors in the school, the education system, the community and the culture that can support or that may hinder effective teaching
- encourage evidence-informed teacher collaboration and self-reflection as strategies to enhance effectiveness and achieve consistency in improving effectiveness in all aspects of teaching
- encourage monitoring and observation using appropriate research-based protocols to support professional learning and the development of effective practices among teachers and among subject departments
- incorporate the students' perspectives and experiences to promote positive school and classroom climates that engage and motivate learners.

The following six practical guidelines are recommended when practitioners are to apply the research findings in teacher evaluation:

1. Recognise the value of knowledge from research that uses a range of sources, including: value-added measures of student progress; observations of classroom practices; teacher self-report; evidence from student surveys and the professional judgements of inspectors.
2. Consider the purposes of any teacher evaluation before deciding on the appropriate measures to employ.
3. Remember that validity depends on how well the instrument measures what you have deemed important and how the instrument is used in practice; there are advantages in using well developed international instruments often supplemented by additional items of particular local relevance.
4. Seek out or create appropriate measures to capture important information about teachers' contributions to other student outcomes that go beyond student achievement score gains.
5. Include different education stakeholders in making decisions about what is important to measure.
6. Keep in mind that valid measurement may be costly.[129]

[129] Little, Goe & Bell (2009).

Although it may be difficult to ensure all students experience high quality teaching the fact that teachers and teaching make such an important difference to student outcomes and life chances should provide impetus to policymakers and practitioners to address the crucial issues of educational effectiveness, quality teaching and teaching standards. Attracting high quality entrants to the teaching profession, and providing high quality pre-service education and ongoing professional development are important requirements for maintaining and raising standards in teaching. However, they are unlikely to be sufficient to ensure high quality teaching across a system. Since teachers are the most valuable resource available to schools, ongoing investment in teacher professionalism is needed to ensure that they are equipped with an evidence-based repertoire of pedagogical skills that are effective in meeting the developmental and learning needs of all students.[130] It is important to recognise that teaching is not just an art, but that there is a growing knowledge base from research evidence that can provide relevant guidance to promote effective practice and support improvement. There is a need to reduce the variation in the quality of teaching both within and between schools, and to ensure that vulnerable students at risk of poor educational outcomes experience high quality teaching to enhance their educational life chances.

It is important to recognise that teachers rarely work in isolation but typically in the context of schools and of local and national education systems. Research findings have repeatedly shown that there are variations in teacher effectiveness among the teachers of a department and in a single school.[131] There are likely to be both some more effective and some less effective teachers in all schools, both in those that are defined as more effective as well as in those that are classed as typical or less effective schools. However, in an effective school it is likely that there are a higher number of teachers who typically use more effective practices. In an ineffective school the reverse is usually the case; thus one of the most important factors that distinguishes effective from ineffective schools is the proportion of effective teachers.

[130] Rowe (2006).
[131] Fitz-Gibbon (1996); Mortimore et al. (1988); Sammons et al. (1997).

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