This briefing highlights five guiding principles and six key strategies, gathered from evidence-based educational research, that have been proved effective in closing the attainment gap both nationally and internationally.

The author of this briefing is an education specialist and former head teacher who recently completed her doctoral studies. This briefing is the result of research carried out as part of the author’s SGSSS doctoral placement with SPICe.
CONTENTS

EXECUTIVE SUMMARY .......................................................................................................................... 3

INTRODUCTION ........................................................................................................................................... 5

WHAT SIGNIFICANT PRINCIPLES UNDERLIE CLOSING THE ATTAINMENT GAP? ................................. 8
  The Child at the Centre .......................................................................................................................... 8
  Individual Needs ..................................................................................................................................... 9
  Building Respect and Trust .................................................................................................................... 10
  Balance between Autonomy and Accountability .................................................................................... 10

WHAT SIGNIFICANT EDUCATIONAL STRATEGIES CAN SUPPORT CLOSING THE ATTAINMENT GAP? ... 13
  High Quality Teachers and Teaching .................................................................................................... 13
  Strong School Leadership ..................................................................................................................... 17
  Reflective Practice and Research ......................................................................................................... 19
  Networks of Support and Collaboration ............................................................................................... 21
  Effective Assessment and Evaluation .................................................................................................... 23
  Early Intervention .................................................................................................................................... 24

ANNEXE A: GLOSSARY OF TERMS ........................................................................................................... 26

ANNEXE B: KEY LEGISLATION IN SCOTTISH SCHOOL EDUCATION ....................................................... 28
  Year ....................................................................................................................................................... 28
  Title ...................................................................................................................................................... 28
  Key Provisions ...................................................................................................................................... 28

ANNEXE C: ATTAINMENT GAP ................................................................................................................ 29

SOURCES .................................................................................................................................................... 30
EXECUTIVE SUMMARY

The link between socio-economic disadvantage, academic attainment and job prospects is a global issue (OECD, 2011, 2014). In Scotland, various measures have been taken over the years to attempt to break the seemingly inevitable intergenerational cycle of poverty and to address a lack of ‘positive and sustained destinations’ (Education Scotland, 2008; 2016a, 2016b). There remains a strong correlation between a pupil’s socio-economic status and their educational attainment. Pupils from disadvantaged backgrounds have a higher chance of not succeeding in school.

KEY POINTS

This briefing focuses on what schools can do to close the attainment gap. It identifies five guiding principles:

1. Putting the child at the centre
2. Addressing individual needs
3. Building respect and trust
4. Balancing autonomy and accountability
5. Enabling flexibility and creativity

And six key areas/interventions, gathered from evidence-based educational research both nationally and internationally, that have collectively proved effective in closing the attainment gap. Providing:

1. High quality teachers and teaching
2. Strong school leadership
3. Reflective practice and research
4. A network of support and collaboration
5. Effective assessment and evaluation
6. Early intervention

However, a reminder and caution:

1. In addition to having economic aims and advantages, education is a moral activity — subjective, complex and difficult to measure.

2. ‘The relationship between theory and practice is often both complicated and subtle, and this is especially the case in an area like education, which necessarily involves values as well as facts’ (Winch and Gingell, 2008: 212).

3. These differences have a significant impact on classroom practice, educational debate and research, and public policy.

4. Closing the attainment gap is therefore by implication equally complex. There is not one ‘gap’, nor one ‘solution’ for how gaps can be closed’ (Florian (2016:3). The principles and strategies highlighted in this paper collectively provide a ‘best bet’ to
help resolve ‘the stubborn issues of deprivation and education’s social gaps’ (OECD, 2015: 14).

This briefing acknowledges that, while schools have an important role in closing the attainment gap, what they contribute is only one aspect of the multi-dimensional efforts across various organisations, policies and practices.
INTRODUCTION

The link between socio-economic disadvantage, academic attainment and job prospects is a global issue (OECD, 2011, 2014). In Scotland, the concern for widening educational opportunities and educational success for all, regardless of gender, social and cultural background is a historical priority that dates back to the humanist movement of the 18th Century. Various measures have been taken over the years to attempt to break the seemingly inevitable intergenerational cycle of poverty and lack of ‘positive and sustained destinations’ (Education Scotland, 2008; 2016a, 2016b).

An OECD (2007: 14) report commissioned by the Scottish Government entitled Quality and Equity of Schooling in Scotland, indicated that Scotland performs at a ‘consistently very high standard in the Programme for International Student Assessment’ (PISA) and that Scotland also has one of the most equitable school systems among OECD countries. In 2015, the OECD’s report on Improving Schools in Scotland again highlighted many strengths in Scottish education, and the Scottish Government recognises that ‘Scotland has a good education system’ (Scottish Government, 2016: 2). However, recent reports also suggest that there are ‘significant challenges’ (Scottish Government, 2016: 3).

There remains a strong correlation between a pupil’s socio-economic status and their educational attainment. Pupils from disadvantaged backgrounds have a higher chance of not succeeding in school.

Socio-economic status exerts a powerful influence on attainment results in schools, but this link is not just about poverty (i.e. those from low socio-economic backgrounds) (Annexe A and C). In Scotland, ‘pupils in the 40 per cent least deprived areas are not living in poverty, yet they still do worse on average than those in the 20 per cent least deprived areas, who in turn do worse than those in the top 10 per cent’ (SPICe Briefing 16/33, 2016: 24). Furthermore, other disadvantages based on culture, ethnicity, gender, sexuality and disability also intersect to produce inequalities that can impact on a pupil’s performance in school and potential to reach positive and sustained destinations (Arshad, 2005; Equality and Human Rights Commission, 2015; 2016a; Davis, 2016).

The PISA report (OECD, 2011) identified that, across OECD countries, despite being from disadvantaged backgrounds, one-third of disadvantaged students identified as ‘resilient’, and ‘beat the odds stacked against them’. The report found three factors that defined these ‘resilient students’ — spending more time in class, confidence in their academic ability, motivation and an intrinsic personal drive to succeed. The report concluded that schools ‘may have an important role to play in fostering resilience’ (OECD, 2011: 4) (See Annexe A).

Schools also have a role to play in reducing inequalities. Davis (2016: 2) argues that ‘there is a need for greater recognition and action on how intersectional discrimination and inequalities impact on wellbeing and prevent children from participating and learning effectively’. Other studies confirm this argument (Hick et al., 2011; Konstantoni et al., 2014; OECD, 2014; Hopkins et al., 2015). The PISA results suggest that whilst increased learning time in class, is not in itself sufficient, there are a number of policies that can improve performance among disadvantaged students (OECD, 2011: 4).

In a statement to Parliament, the First Minister declared that the Scottish Government ‘will draw on successful ideas from around the world in order to close the attainment gap in Scotland’.

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1 The term attainment, as opposed to achievement, is used throughout the paper. An explanation of both terms can be found in the Annexe A.

2 As measured by the Scottish Index of Multiple Deprivation, a composite measure of deprivation in small geographical areas.

3 PISA is an international sample survey of literacy, mathematics and science ability among 15 year olds.
(Sturgeon, 2016). She introduced a range of initiatives not only in the education sector, but across health, childcare, social services, welfare, and employment that would be undertaken. The Scottish Government recognises that ‘ensuring equality of opportunity for young people starts well before the school years and extends far beyond the school gates’ (Sturgeon, 2016). This briefing focuses on what schools can do to close the attainment gap. It highlights six key areas/interventions, gathered from evidence-based educational research both nationally and internationally, that have collectively proved effective in closing the attainment gap, but this is not exhaustive.

It is also worth pointing out that, while the focus of this paper is on what schools can do, there is significant variation between and within schools in terms of pupil attainment (Sammons, 1995; Sammons et al., 1997):

‘Few schools are universally good at teaching across all subject areas. Conversely, few are universally bad at teaching them all.

Only a very small minority of schools and departments perform consistently over time as effectiveness fluctuates from one year to the next.

There is some evidence that both schools and departments are differentially effective with pupils from different social and ethnic backgrounds as well as high and low attainers, for reasons that are not as yet well understood.’ (Sammons et al., 1997: x)

Therefore, ‘teachers’ collective practices and interactions’ cannot be ignored (Sammons et al., 1997: x). Structural and specific policy interventions are useful, but the quality of teachers and teaching quality is vital.

Studies of school effectiveness are not new, having begun nearly four decades ago. In a review of literature on ‘the key determinants of school effectiveness’, Sammons (1995) gleans the main characteristics that make a difference in pupil attainment, and these are largely reflected in this briefing.
The chart above represents the six key areas/ interventions for success in education (outer circle), with the child at the centre, and the essential principles that permeate the life and work of the school and its staff. The diagram has been developed to reflect the key themes identified in this briefing.

This briefing acknowledges that what schools can contribute is one aspect of the multi-dimensional efforts across various organisations, policies and practices. Kerr at al. (2010: 39) warn that ‘school effects must not be overstated, as they have sometimes been by national policy-makers…some researchers have drawn attention to the in-built limitations of school improvement efforts, arguing that schools inevitably reflect the massive inequalities that exist within British society’. However, other researchers argue that if the efforts to improve schools to enable them to close the gap are ‘linked to wider actions to break down the additional barriers faced by disadvantaged groups’, then such efforts are ‘worthwhile’ (Kerr et al., 2010: 39).

‘Studies of the complexity of [educational] practice highlight that there is not one ‘gap’, nor one ‘solution’ for how gaps can be closed’ (Florian, 2016: 3). As a note of caution, and as the situation in London illustrates, it ought to be emphasised that explanations for success in schools are ‘not simple and do not result from a single policy’, intervention or as a result of one strategy in a school (Blanden et al., 2015: 36). This briefing does not attempt to recommend or
evaluate specific educational interventions or programme. Neither does it attempt to critically assess the effectiveness of specific government policies.

Rather, as is represented in Figure 1 above, the briefing foregrounds several critical guiding principles and effective strategies that act as a foundation upon which some schools promote their pupils’ general wellbeing (see Annexe A) and resilience, enabling pupils to learn and develop, despite the unfavourable circumstances surrounding their personal lives.

WHAT SIGNIFICANT PRINCIPLES UNDERLIE CLOSING THE ATTAINMENT GAP?

‘Who you are in Scotland is far more important than what school you attend, so far as achievement differences on international tests are concerned. Socio-economic status is the most important difference between individuals. Family cultural capital, life-style, and aspirations influence student outcomes through the nature of the cognitive and cultural demands of the curriculum, teacher values, the programme emphasis in schools, and peer effects.’ (OECD, 2007: 15, my emphasis)

The OECD (2007) believes that variations in school standards in Scotland do not have the same level of impact on a student’s overall achievement, but socio-economic deprivation in a student’s family background does (See Annexe A). Yet, it is arguably schools that can make a positive contribution to a child who is disadvantaged.

The National Foundation of Educational Research (NFER) conducted a study based on interviews with senior leaders from more and less successful schools in England. The research concludes that there are seven ‘building blocks for success’ for promoting high attainment, which are reflected in the condensed version as illustrated in Figure 1 above. However, what is significant about their findings and indeed in other studies are certain embedded ideas that are not part of ‘structural interventions’ or ‘micro-managed policies’ imposed from governments and education departments (Kerr et al., 2010).

There are several significant principles that undergird a successful school’s ability to motivate a child to learn — to be ‘confident, successful, responsible and effective’ individuals (Curriculum for Excellence, 2003). These principles can often be part of a ‘hidden curriculum’ — unintended lessons that are absorbed by pupils through the rules, norms and values conveyed in the classroom and the general school environment (See Annexe A). At times, these unintended learning experiences convey negative messages to pupils, but five principles in particular can have a positive influence on building resilience, particularly in pupils from disadvantaged backgrounds.

The Child at the Centre

The right of a child to receive an education stems from and is enshrined in the European Convention on Human Rights (Article 2 of Protocol 1) and the United Nations Convention on the Rights of the Child (UNCRC, Articles 12 and 28). The child’s right to be educated or be in education is reflected within education authorities’ attempts to provide formal structures — a physical space or school building, a curriculum and the professional relationship between a qualified teacher and pupil. At an academic engagement event held recently at the Scottish Parliament by the Scottish Parliament Information Centre (SPICe), there was strong consensus amongst the academics and headteachers who attended that the interests of the child ought to be at the heart of policy and practice.
Schools that succeed in fostering resilience in disadvantaged pupils are not only aware that children are at the centre of all that they do, but ensure that this is the case in practice (Rutter, 1985, 1987; Cefai, 2008; OECD, 2011; Siraj-Blatchford, 2011; Davis et al., 2014a; Davis, 2016). It should be noted that resilience is a contested concept (Little et al., 2004).

Nevertheless, there is much research that reveals that the concept is useful in explaining how some children succeed despite the most adverse circumstances. Studies have shown that the idea also allows practitioners in the field of education, health and social services, to intervene and support children and families by working with their strengths to prevent the exacerbation of their vulnerabilities. Successful schools and effective teachers seem to identify and build on these strengths to promote resilience (Rutter, 1985, 1987; Cefai, 2008; OECD, 2011; Siraj-Blatchford, 2011). In doing so, they recognise and respect the voices, choices and contributions of children and young people, and take children’s rights seriously. Students in these schools realise that they are respected and valued regardless of their background or abilities.

**Individual Needs**

Focusing on children as the main purpose and drivers of all that we do in our schools, means that schools and teachers strive to meet the individual needs of every child, however simple or complex, whether it requires short-term interventions or more long term, sustained efforts (Norwich, 2002; Florian, et al., 2007; Wyness, 2011; Burgess, 2014; CfBT, 2014; Greaves et al., 2014; Blanden et al., 2015; MacLeod et al., 2015; OECD 2015; Florian, 2016). Crucially, research undertaken by the Department for Education highlights that the most successful schools, ‘have an ethos of high attainment for all pupils and avoid stereotyping disadvantaged pupils as all facing similar barriers or having less potential to succeed’ (MacLeod et al., 2015).

Many academic studies have concluded that successful schools have effective teachers who ‘know every child’s challenges and interests, and look closely at ways of supporting them to achieve their very best’ (Barth, 1999; Florian et al., 2007; Sahlberg, 2009, 2011; Florian and Linklater, 2010; Siraj-Blatchford, 2011; Florian, 2016). These and others argue that closing the attainment gap requires that children who are poor or disadvantaged are not discriminated against; standards and expectations are not lowered for them.

Davis and Smith (2012) argue that ‘the Birth To Three Curriculum, A Curriculum for Excellence (Additional Support for Learning) (Scotland) Act 2004 and Getting It Right for Every Child, if implemented collaboratively — not as ‘top down performance requirements but with the active participation of children and adults in a community — can remove barriers to children’s learning’ (2012, cited in Davis, 2016). They argue that when children and young people are consulted and encouraged to be active learners and participants in fulfilling their own potential, then there is a greater chance of motivating them to remain in school. They are allowed the space to have a vested interest in their futures. Findings by the OECD (2008: 9) confirm the importance of personalised learning — ‘Learning sciences research suggests that more effective learning will occur if each learner receives a customized learning experience’.

The Endowment Education Foundation (EEF) (2016) produced a useful teaching and learning toolkit which not only look at attainment outcomes, but also cost effectiveness and the robustness of the evidence base. It should be noted that this work is based on meta-analyses and as such prioritises the findings of only certain types of research, those that enable the generation of effect sizes. In other words, this research has a certain type of experimental design, and as such makes generalisations and compares means. Nevertheless, it is useful research generating best bets for what we should focus on, but it does not reveal the details of how these measures can be executed.

The EEF (2016) points out that creating an individual learning programme for every pupil can be onerous for a teacher to manage and their research shows that this strategy is not effective.
Individual instruction at class level can be difficult to manage. In other words, addressing individual needs does not mean individual instruction for every pupil throughout the school day.

**Building Respect and Trust**

Research suggests that a collaborative approach that includes children and their families in planning and decisions requires a culture of respect and trust on the part of schools and teachers. Ciuffetelli Parker (2013: 1), in her study on successful strategies employed by seven schools in Ontario to address poverty faced by pupils, suggests that building whole-school culture and ethos that is positive, bias free and respectfully inclusive ‘have garnered excellent advancements across Ontario’. Successful strategies for addressing poverty range ‘from enhancing teacher awareness to community partnerships to changes in professional practice’ (Ciuffetelli Parker 2013: 1). The experience of successful schools in Ontario demonstrate that building trusting and respectful partnerships [to achieve] better understanding of how poverty affects families, schools and communities has been crucial in helping to close the attainment gap (Ciuffetelli Parker 2013: 4).

Ciuffetelli Parker’s (2013) research reveals that these successful schools and teachers have a different mindset concerning poverty and do not assign blame to families when students are not performing in school, but are aware of and have been trained to understand the different types of poverty and its effects. Teachers ‘view children and families living in poverty in terms of their possibility and promise rather than their deficiencies (Ciuffetelli Parker 2013: 2).

Other studies in Ontario (Gorski, 2012; People For Education, 2013) reflect similar principles that underlie schools that ‘mind the gap’ in order to shape better policies and practice for their disadvantaged pupils, rather than basing these on stereotyped ideas about what it means to be poor.

Bryk and Schneider (2003) conducted almost a decade of intensive case study based on research and longitudinal statistical analyses from more than 400 Chicago elementary schools. They concluded that ‘human resources — such as openness to improvement, trust and respect, teachers having knowledge and skills, supportive leadership, and socialization—are more critical to the development of professional community than structural conditions’ (Bryk and Schneider, 2003:40). They found that ‘trust in schools is a core resource for school reform’ and that schools and teachers require respect and trust from government, local authorities, parents and the community (Bryk and Schneider, 2003). There is greater chance of success when their professionalism is valued in ‘judging what is best for students and in reporting their learning progress’ (Sahlberg, 2009: 21). Schools and teachers who receive appropriate resources and support are better able to support students ‘who at risk to fail or left behind’ (Sahlberg, 2009: 21).

Research also reveals that when struggling schools are evaluated and held to account based solely on test results, without support, the system can inadvertently affect morale, perpetuating a culture of schools, teachers and pupils, who feel and are undervalued (Trow, 1996; Bryk and Schneider, 2003; Kezar, 2004; Sahlberg, 2009: 21). Respect and trust cascade down and through the education system, which leads to greater freedom and creativity.

**Balance between Autonomy and Accountability**

Kerr et al. (2010: 41) observe that governments tend to promote and support top-down ‘one-size-fits-all, formulaic approaches’ to school improvements and that school-level development strategies, are rarely encouraged. Yet much research shows that ‘activities that allow staff to find the best ways of making an intervention work in their school have been found to be useful’ (Kerr et al., 2010: 41). Studies conducted by the OECD (2008, 2013a, 2013b) have found that it
is difficult to achieve high standards for all groups of children when schools have only limited flexibility in teaching resources and that there is a lack of more freedom.

‘Greater management freedom in these two areas needs to be part of a compact with local government, which establishes expectations in exchange for autonomy, and encourages and protects innovation and risk-taking through an authoritative mandate’ (OECD, 2007: 16).

In his work on Finnish Lessons, Sahlberg (2009, 2011) argues that one reason for the success of schools in Finland is that schools and teachers are encouraged to take risks and be creative in their approaches to teaching and learning (2009: 21). According to Sahlberg there seems to be less control and interventions from government in Finland. Sahlberg’s (2009: 21) table below (Figure 2) seeks to illustrate the distinction between two systems of educational reform since the 1980s.

Figure 2: Global features of education development and alternatives since the early 1980s

<table>
<thead>
<tr>
<th>Education Policies and Reform Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Education Reform Movement (GERM)</strong></td>
</tr>
<tr>
<td><strong>Strict Standards</strong></td>
</tr>
<tr>
<td>Setting clear, high, centrally prescribed performance standards for all schools, teachers and students to improve the quality and equity of outcomes.</td>
</tr>
<tr>
<td><strong>Focus on Literacy and Numeracy</strong></td>
</tr>
<tr>
<td>Basic knowledge and skills in reading, writing, mathematics and the natural sciences serve as prime targets of education reform.</td>
</tr>
<tr>
<td><strong>Teaching for Predetermined Results</strong></td>
</tr>
<tr>
<td>Reaching higher standards as criterion for success and good performance; minimises educational risk-taking; narrows teaching to content and use of methods beneficial to attaining preset results.</td>
</tr>
<tr>
<td><strong>Transferring External Innovations for Educational Revolutions</strong></td>
</tr>
<tr>
<td>Sources of educational change are external innovations brought to schools and teachers through legislation or national programmes. These often replace existing improvement strategies.</td>
</tr>
<tr>
<td><strong>Test-based Accountability</strong></td>
</tr>
<tr>
<td>School performance and raising student achievement are closely tied to processes of promotion, inspection and ultimately rewarding schools and teachers. Winners normally gain fiscal rewards whereas struggling schools and individuals are punished.</td>
</tr>
</tbody>
</table>
Sahlberg believes the ‘global education reform movement’ reflects what many countries are encouraged to undertake, but the ‘alternative reform movement’ is more in line with the Finnish experience.

These two seemingly binary and opposing systems would suggest that education systems create and produce different aims and outcomes, depending on whether they subscribe to GERM or ARM principles, as Sahlberg’s table indicates. Each system arguably has its strengths and challenges and reflects the tension between control, autonomy, accountability and desired results for children and young people, no matter their socio-economic background.

This dichotomy is reflected in other studies. For example, Sparks (2004) argues that governments and policy makers generally tend to prefer a top-down approach. Opfer and Pedder (2011), on the other hand, maintain that teachers tend to prefer bottom-up approach. However, an extensive review by Timperley (2008) suggests that neither approaches necessarily produces better sustained results for pupils.

What has been shown to work instead is when practitioners take account of student need by reflecting on what to do in new situations and the ability to behave effectively in managing their relationships with their students (Argyris and Schön, 1974). Timperley et al. (2009, as cited in Wall et al., under review: 3) found that when teachers in New Zealand took account of student need in their own professional learning and development, they produced student gains that were four times the national expectation. When teachers and students’ learning are linked and interrelated, both parties are engaged and benefit in the long run.

In a robust review of the field she showed that the association of both a top-down and bottom-up approach with improvement is weak and often variable with little impact sustained. However, ‘with bottom up approaches a close association to student need that engages with practitioners’ theories of practice (Argyris and Schön, 1974) increases the likelihood of sustained impact on student outcomes’ (Wall et al., under review: 3).

A balance between performance-related accountability and autonomy, with greater levels of flexibility and freedom to be creative in addressing student need, seems an important principle in successful schools.
WHAT SIGNIFICANT EDUCATIONAL STRATEGIES CAN SUPPORT CLOSING THE ATTAINMENT GAP?

There are a number of strategies identified in research, such as supporting high quality teaching and ensuring good networks of collaboration, which can support efforts to close the attainment gap.

High Quality Teachers and Teaching

It is arguably a universally agreed principle that the quality of teachers and teaching is crucial for effective learning in the classroom and can have a significant, if not transformative, impact on a disadvantaged pupil’s future prospects (Sammons, 1995; Sammons et al., 1997; Kerr et al., 2010; Donaldson, 2011; OECD, 2011, 2015; Blanden et al., 2015). And there are a number of key strategies that have been shown to improve learning and attainment, and especially amongst pupils who are disadvantaged.

What makes a good teacher?

Research has found that the aspects of teacher quality that contribute to closing the attainment gap are linked to their high status as well-paid professionals who are academically able, well-rounded and multi-talented individuals (Westbury et al., 2005; Hanushek and Rivkin, 2006; Sahlberg, 2009, 2011; Donaldson, 2011; OECD, 2015). These recruits into the profession make a significant difference to a pupil's ‘resilience’ in school and beyond when they are:

- highly trained and deployed effectively (Donaldson, 2011; Sahlberg, 2009, 2011; MacLeod et al., 2015; OECD 2015)
- granted greater autonomy to be active and creative drivers of change (Sahlberg, 2009, 2011; Blanden et al., 2015)
- ‘research literate’ (BERA-RSA, 2014) including pedagogical and subject knowledge expertise (Coe et al., 2014: 2)
- aware of, and have an enhanced understanding of, the different kinds of poverty beyond the visible signs and conditions (Pirie and Hockings, 2012; Ciuffetelli Parker, 2013; Davis et al., 2014a, 2016; Ontario Student Achievement Division, 2015)
- aware of, and have an enhanced understanding of other inequalities (Arshad, 2005, 2016a; Davis et al., 2012, 2014a, 2016; Florian, 2016).

Coe et al. (2014: 2-3) found that there is ‘strong evidence’ ‘the most effective teachers have deep knowledge of the subjects they teach’ and that the ‘quality of instruction’ also has a significant impact on student outcomes. A report by the Department for Education in London also highlighted that in more successful schools teaching assistants are also well-trained — in pedagogy, quality questioning and feedback skills. They are deployed strategically across the school; even creating subject-specific teaching assistants who have a high level of knowledge in their specialist area (MacLeod et al., 2015).

However, the EEF (2016) suggest that studies reveal a mixed impact on pupil learning from the use of teaching assistants. Much depends on the quality of the assistant, the training provided, and the tasks assigned. It should also be noted that, overall, the level of evidence related to teaching assistants is limited. A number of systematic reviews of the impact of support staff in schools have been conducted in the UK and internationally. However, ‘there are no meta-analyses specifically looking at the impact of teaching assistants on learning’ (EEF, 2016).
What are effective teaching and learning approaches?

‘We define effective teaching as that which leads to improved student achievement using outcomes that matter to their future success. Defining effective teaching is not easy. The research keeps coming back to this critical point: student progress is the yardstick by which teacher quality should be assessed’ (Coe et al., 2014: 2).

There are several powerful teaching and learning approaches employed by highly trained practitioners that have been shown to have a positive impact on learning and on closing the attainment gap, but this is by no means an exhaustive list.

‘There is also strong evidence as to which classroom strategies work well and which do not. Specifically, the evidence supports the use of whole class interactive teaching, peer tutoring, and the development of problem solving and thinking skills, and collaborative small group activities, particularly where experienced teachers use such approaches skillfully. A consistent whole-school approach to teaching methods and behaviour management has also been found to be effective, and teachers need to be encouraged to experiment with new ways of reaching those learners who are not responding to existing teaching strategies’ (Kerr et al., 2010: 40).

However, the idea of consistent whole school approaches is more nuanced in practice. Some subjects have specific demands e.g. safety in science and PE, which necessarily involves different teaching methods and preferences.

**Metacognitive training** (Moseley et al., 2005; MacLeod et al., 2015; OECD 2015) can be defined as learning to learn. It is a ‘process of discovery about learning. It involves a set of principles and skills, which, if understood and used, help learners to learn more effectively and so become learners for life. Moseley et al. (2005) provide an excellent overview of learning theory and practice that produces a useful model of learning that has been shown to work very successfully with students and teachers.

At its heart is the belief that ‘learning is learnable’ (Wall et al., 2010). Pupils learn to learn in classrooms from their teachers and their peers, and teachers learn to learn how to teach more productively through their own research and continuing professional development.

There is a significant amount of research that demonstrates it is crucial to educate pupils for the 21st Century and the nature of the higher level thinking and dispositions that are needed for young people to enter into a job market, as yet undefined. Research by the EEF (2016) maintains that many studies have found ‘meta-cognition and self-regulation approaches have consistently high levels of impact, with pupils making an average of eight months’ additional progress’. The evidence indicates that teaching these strategies can be particularly effective for low achieving and older pupils.

Their study also found that these strategies are ‘more effective when taught in collaborative groups so learners can support each other and make their thinking explicit through discussion’ (EEF, 2016). The EEF (2016) states that teaching approaches which encourage learners to ‘plan, monitor and evaluate specific aspects of their own learning have very high potential, but require careful implementation’ by highly trained teachers. Pupils with metacognitive knowledge and skills and higher level thinking, are likely to do much better in school, at work and in life.

**Collaborative learning** (MacLeod et al., 2015; OECD 2015) can be defined as an approach where learners work on a task together. Each learner contributes to, and benefits from, others’ involvement in the activity. It is distinguished by the fact there is a common task and a single group result’ (Gillies, 2015). ‘Co-operative learning, on the other hand, can involve separate
tasks and individual outcomes although the process may be marked by shared activity and mutual support’ (Gillies, 2015).

Research by the EEF (2016) found that there is very strong evidence gathered over an extended period of time that ‘the impact of collaborative approaches on learning is consistently positive, but it does vary so it is important to get the detail right’. For example, collaborative learning is not just a matter of placing children in groups, but pupils will need:

‘support and practice to work together as this does not happen automatically. Tasks need to be designed carefully so that working together is effective and efficient. It is particularly important to encourage lower achieving pupils to talk and articulate their thinking in collaborative tasks as they may contribute less […] approaches which promote talk and interaction between learners tend to result in the best gains’ (EEF, 2016).

Inclusive pedagogies (Florian et al., 2007; Florian and Linklater, 2010; Florian, 2016) the idea that all learners differ is the starting point of inclusive pedagogy, which values individual differences and needs of all pupils. It can be defined as ‘an approach to teaching that aims to raise the achievement of all children, whilst safeguarding the inclusion of those who are vulnerable to exclusion and other forms of marginalisation’ (Florian, 2016: 2). The teacher uses appropriate and adaptable strategies to enable every pupil to access a lesson in order to ensure ‘high levels of engagement and motivation’ (Florian, 2016: 3). This approach was highlighted by the OECD (2011: 4) as being ‘particularly beneficial’ for increasing the resilience of disadvantaged pupils.

Peer tutoring (Moseley et al., 2005; Lavy et al., 2012; MacLeod et al., 2015; OECD 2015) is an organized learning experience in which one student serves as the teacher or tutor, and the other is the learner or tutee. Students act as both learners and teachers. It gives students an opportunity to use their knowledge in a meaningful, social experience (Conrad, 1974).

The EEF (2016) found, based on extensive studies, that ‘overall, the introduction of peer tutoring approaches appears to have a positive impact on learning, with an average positive effect of approximately five additional months’ progress’. Peer tutoring benefits both tutors and tutees, but crucially the EEF stresses that ‘there is some evidence that children from disadvantaged backgrounds and low attaining pupils make the biggest gains’ . There are, however, some detailed examinations that show that teaching children to have the metacognitive and communication skills to be able to effectively assess their peers, and to be peer assessed, is an essential baseline for such an intervention (Wall et al., 2009).

Peer mentoring is a system that trains and enables pupils ‘to support each other, the school community and staff by either supporting play, study skills or resolving conflict’ (Restorative Justice Council, 2016). Peer assessment is ‘evaluation carried out by one or more learners on the work or performance of another learner or group of learners’ (Gillies, 2015).

Research shows that, when used together, tutoring, mentoring and assessment are powerful tools that involve learners in their own and each other’s learning, and social and emotional development (Goodlad and Hirst, 1989; Greenwood et al., 1989; Lavy et al., 2012; MacLeod et al., 2015; OECD 2015). These strategies do not operate outwith teacher input, but complement teaching, feedback and assessment provided by teachers. The EEF (2016) recommends that ‘training for staff and tutors are essential ingredients for success’.

Literacy (Machin and McNally, 2008; Sosu and Ellis, 2014) The teaching of literacy has been shown to work to support pupils from disadvantaged backgrounds. The implementation of the Literacy Hour, for example, has proved effective in some areas, like London, as have other subject specific initiatives focussing on basic knowledge and skills like numeracy and the
sciences. The literacy hour was a fundamental part of the National Literacy Strategy implemented by New Labour in 1997. The impact of this was debatable and varied according to individual teacher’s ability and skill. As a result, it was phased out by the coalition government.

PISA surveys demonstrate that strengthening reading ability and enjoyment can ‘mitigate 30% of the attainment gap’ and have a positive effect on other subject areas (Sosu and Ellis, 2014). (Ciuffetelli Parker (2013: 4) argues that another benefit of the use of literature is its capacity to enhance understanding, as it can be a vehicle for promoting social awareness.

However, Sahlberg (2009: 22) makes a useful point about the need for a well-rounded, balanced curriculum that focuses on ‘deep, broad learning, giving equal value to all aspects of growth’, not just the basics. The emphasis is on a holistic education — a wider understanding and interpretation of the curriculum, rather than a narrow one based on just the basics. Based on their findings, the OECD (2015: 117) argues that ‘the intensive focus on literacy and numeracy has tended to side-line other important areas of learning such as science, history and geography, physical and health education, the arts, citizenship, and a wide range of what are now termed 21st Century skills’.

Sahlberg also argues that it is important that teachers are well rounded accomplished individuals in their own right, in order to deliver such a curriculum (Sahlberg, 2009: 25). Wall et al. (2010) also stress the importance of keeping the understanding of attainment as wide as possible. They argue that ‘in England this has become very narrow to just English and Mathematics, and while important are only a small element of what we would see as the outcomes of a good education system. In the Campaign for Learning project the teachers involved demonstrated that they wanted to engage with learning as lifelong and life-wide’.

Sahlberg (2009: 14) maintains that highly trained and effective teachers are willing and able to observe and assess pupils’ different strengths and needs, in order to recognise and prevent problems early, whilst motivating them to persevere in school. For example, he highlights innovative vocational training programmes as an example of addressing the specific needs of pupils ‘whose learning styles prefer a more practically oriented curriculum’ in order to keep them in education (Sahlberg 2009: 14). However, one consequence of highlighting vocational routes is that, in the past, pupils were selected into such routes and those from disadvantaged backgrounds tend to be disproportionately represented. Raffe et al. (2004; 2007) debate the need for ‘vertical and horizontal ladders’ to link vocational routes to provide progression rather than dead ends. The need for high quality vocational pathways alongside general education is a continuing debate.

Other approaches that have proved successful in addressing the attainment gap include:

- expecting all children to succeed
- the use of higher-order questioning and graphic organizers (EEF, 2016)
- fostering humanitarianism and positive attitudes and emotions as foundations for both academic and emotional success
- use of classroom community-building strategies that foster a positive and inclusive environment and respect for diversity (Ciuffetelli Parker, 2013: 3-4).
- flexible teaching strategies to suit individual needs (OECD, 2008: 9)

To summarise, the OECD (2007: 16) states clearly that students need to be motivated and strong incentives to learn and succeed need to be built into study programmes:

‘Intrinsic incentives relate to quality of teaching, enjoyment of learning, robust instructional design, formative assessment, continuous feedback, individual attention, and sensitivity to student learning style. Extrinsic incentives relate to the economic benefits of school. They
include skills, generic and specific competencies, practical experience, access to accredited vocational training, and good pathways to further education, training, and employment.’

These incentives are especially important for pupils from disadvantaged backgrounds as ‘they are the students who are least likely to receive this support elsewhere’ (OECD, 2011: 4). Ultimately, however, many studies have revealed that improving the quality of teaching has been shown to make a difference and teacher agency is crucial (Donaldson, 2011; Sahlberg, 2009, 2011; Burgess, 2014; CfBT, 2014; Greaves et al., 2014; Timperley, 2008; Blanden et al., 2015; OECD, 2011, 2014, 2015; Priestley et al., 2015).

**Strong School Leadership**

Just as high quality teachers and teaching are necessary for building resilience and capturing the missing talent of pupils from disadvantaged backgrounds, it is arguably a universally agreed principle that the quality of school leadership is equally vital and can have a significant, if not transformative, impact on a pupil’s future prospects (Fullan, 2003; Day et al., 2009; OECD, 2011, 2015; Donaldson, 2011; Kerr et al., 2010; Sosu and Ellis, 2014; Blanden et al., 2015). However, Bell et al. (2003: 21) in a ‘systematic review of the impact of school headteachers on student outcomes’ found that the connection is more nuanced.

Some research, particularly large scale quantitative studies, argue that school leadership has a small and indirect effect on student outcomes; whilst other studies, qualitative case studies in particular, reveal a stronger relationship (Robinson, 2007). It is arguably immaterial whether the impact is direct or indirect (Robinson, 2007).

As Bell et al. (2003) and other studies attest (Harris and Chapman, 2002; Leithwood and Riehl, 2003; Marzano et al., 2005; Leithwood, 2008; Timperley et al., 2009) it is the nature and quality of leadership that matters (Robinson, 2007). The impact on student performance and satisfaction may not always be direct, and it does mostly occur through the performance of teachers.

**What do effective school leaders do?**

Research shows that successful headteachers manage in particular ways. Education and educational activity may be understood in economic terms, but it is essentially a moral undertaking based on culture and values (Pring, 2004: 12). Fullan (2003) describes effective school leaders as having a ‘strong moral imperative’, and this of course cannot be easily quantified, or accounted for through policy and legislation.

Echoing this moral responsibility, effective school leaders tend to create a whole school ethos that incorporates the core principles mentioned earlier (Leithwood and Jantzi, 1999; Wiley, 2001; Cheng, 2002; Sosu and Ellis, 2014; MacLeod et al., 2015).
• The child is at the centre.
• The child’s individual needs are paramount.
• Respect and trust permeate the school, including teachers, parents and pupils.
• Teachers, and by default pupils, are given greater autonomy, freedom and the space to be creative thinkers.

It is challenging for structural intervention programmes from governments and local authorities to instil these core principles in schools; they exist because of the values, ethics and character of the school leader.

Between 2014 and 2015, the NFER analysed data collected from a survey of 1,329 schools and 49 school leaders, on the role of school strategies, approaches and characteristics in raising disadvantaged pupils’ attainment (Macleod et al., 2015). The study discovered that effective headteachers provide ‘clear, responsive leadership’ in several ways. They:

• promote whole school ethos of attainment for all pupils and disadvantaged pupils are not stereotyped
• create various positive strategies, working with families to promote good behaviour, attendance and enjoyment of school
• set high expectations, monitor performance and share best practice
• use research-based data-driven evidence (within and outwith the classroom) to provide feedback and inform decisions (Macleod et al., 2015: 10).

The EEF (2016) argue that there is strong evidence that ‘suggests that behaviour interventions can produce large improvements in academic performance along with a decrease in problematic behaviours’. Targeted interventions matched to specific needs of individual pupils work even better than universal interventions or whole school strategies (EEF, 2016). School leaders who necessarily prioritise behaviour interventions are more likely to support pupils who might otherwise be left behind.

In addition, headteachers in schools with pupils who are socio-economically disadvantaged:

• prioritise ‘mitigating the effects of poverty on attainment’ in development plans
• increase knowledge of how the attainment gap can be addressed
• train staff to be aware of the signs and effects of poverty
• monitor the impact of ‘new initiatives’ on addressing the gap (Ciuffetelli Parker, 2013; Sosu and Ellis, 2014).

They also learn from and work with neighbouring schools and national networks to raise standards (MacLeod et al., 2015: 11).

To summarise, effective leaders are those that ‘make creative and evidenced based decisions’, have detailed understanding of pupil and staff needs, invest in their staff and, most importantly, lead by example. (MacLeod et al., 2015: 14). However, there remain significant challenges to establishing strong school leadership, and these obstacles — financial, top-down control from governments and local authority education departments, highly prescriptive one size fits all interventions and performance-related accountability — can be challenging to overcome (Fullan, 2003; Marzano, 2005; Day, 2009; Sahlberg, 2007, 2011; Sosu and Ellis, 2014; OECD, 2013b; MacLeod et al., 2015 ).
Reflective Practice and Research

Within the field of education the term research can be defined as ‘the systematic study and investigation undertaken to extend knowledge. Applied research involves using the results of research to inform practice’ (Gillies, 2015). McLaughlin et al. (2004) state that there are three overlapping purposes evident in the teacher research tradition:

1. research and enquiry undertaken for primarily personal purposes
2. research and enquiry undertaken for primarily political purposes
3. research and enquiry undertaken for primarily school improvement purposes.

The model of teacher as reflective practitioner is not a new one (Stenhouse, 1975), and there are many studies that demonstrate that teacher engagement in research, as part of evidence-based education (Davies, 1999), can improve classroom practice and their own professional development (Donaldson, 2011).

Timperley (2008: 28) recognises that ‘teaching is a complex activity’ in which teachers’ beliefs and theories shape what it means to be effective. Her study reveals that the research evidence indicates that:

- involving external expertise can be crucial for promoting this kind of teacher inquiry and knowledge building
- professional development opportunities that are carefully designed and have a strong focus on pupil outcomes have a significant impact on student achievement
- teaching approaches that have been subject to research and wide debate are most likely to have positive impacts on student outcomes
- it is important to integrate theory and practice as they relate to curriculum, teaching practice, and assessment knowledge in the areas that are the focus for professional learning
- effective assessment of pupil learning and needs, and a teacher’s own performance, is a necessary part of the cycle of research inquiry

Timperley also advises that ‘teachers are supported [by school leadership] to identify their professional learning needs through an analysis of their students’ learning needs, to build their pedagogical content knowledge in sufficient depth to address their students’ learning needs and then to check both formally and informally whether their changed teaching practices are having the desired impact’ (Timperley, 2009: 227). It is important that teachers, school leaders and researchers in academic institutions form networks of support and collaboration to facilitate this process (Davies, 1999; Arshad, 2016b; Chapman, 2016, Wall and Hall, in press).

‘Much debate surrounds the nature and value of educational research as the nature of education is not readily amenable to the quantitative techniques of empirical science, whereas qualitative research is sometimes viewed as limited, in terms of its generalisability’ (Gillies, 2015).

According to the BERA-RSA study (2014) entitled Research and the Teaching Profession research can take a variety of forms — enquiry-based, action research, randomised control trials, surveys, analysis of published data and so on. The study also highlights what it means to be ‘research literate’, ‘research engaged’ and ‘research-rich’ (see Annexe A). The main aim of
research in education is to help ‘develop a research-rich self-improving educational system’ (BERA-RSA, 2014:7). This is important because it has the potential to:

- enrich and inform learners’ experiences
- enrich teachers’ professional identity and development
- promote collaboration between teachers, those from other schools and researchers in university
- inform and drive development programmes
- hold schools and colleges to account
- produce new research knowledge

Teachers who are research literate, research engaged and who work in research rich environments are more likely to be effective in responding to the individual needs of their pupils and motivate them to learn with joy (Sahlberg, 2009; 2011). They are more likely, as the evidence in Finnish schools suggest, to take risks, create programmes of work and take ownership of the curricula to find novel ways to teach and learn, not just for their pupils but for themselves (Sahlberg, 2009).

Other studies also highlight the importance of research in educational practice and in closing the attainment gap (MacLeod et al., 2015; OECD; 2015; Royal Society of Edinburgh, 2016). They also stress that along with external research, school-level data also helps to formulate policies and practices.

Wall and Hall (in press) in their paper on negotiating partnership working with teacher-researchers provide a useful summary of underlying principles for conducting research that promotes success:

1. **The Principle of Autonomy: the teacher knows which question to ask**
   - a. Novice researchers may need assistance with methods but *they* still get to choose how to ask their enquiry question
   - b. Teachers know what impact is and they get to say when/if the question is answered satisfactorily
   - c. Only the enquirer can answer the question ‘why did I want to know that?’

2. **The Principle of Dialogue: ethical and robust research is communicated**
   - a. Especially when it hasn’t worked as planned
   - b. Particularly when all participants have a say
   - c. Counter intuitively, communication is *even better* across contexts

3. **The Principle of Disturbance: good questions cause extra thinking**
   - a. Cycles of enquiry are set off by success and failure in research
   - b. The complexity and connections in classrooms start to become more obvious
   - c. All learners (students, teachers, managers and community) tend to become more metacognitive

This final point about disturbance is crucial for development. Cochran-Smith (2009) argues that constructive disruption is a necessary and vital part of being an active, engaged teacher, who not only expects pupils to ask questions, be critical and criticise, but models that mode of inquiry. When the system gives space for teachers to take risks and think creatively, to disrupt taken for granted, established practices, then there is a greater likelihood that learning experiences for all pupils, and especially those who are disenfranchised, will be richer and more meaningful.
Being comfortable with inquiry and research starts at initial teacher education in university (Sahlberg, 2009, 2011; Donaldson, 2011; Arshad, 2016b; Chapman, 2016). ‘Schools of education can play a central role in delivering improvements Scotland wants for its education system by providing … the quality and rigour of their teacher education programme’ (Arshad, 2016b: 2). Peer reviewed research, assured by international standards, can identify successful improvement practices and inform system evaluations at school, authority and national level (Arshad, 2016b: 2).

The RSE (2016: 1) recommends that an ‘overarching single educational research strategy’ ought to be created in the first instance. Funding needs to be in place and as Wall and Hall (2016; in press) recognise, there needs to be direct dialogue between teachers and researchers. The report stresses the need for the research effort to be given the space to be creative and as Wall and Hall (2016; in press) and Cochran-Smith (2009) contends — the space to disturb or disrupt current modes of thinking and practices. This requires autonomy, trust and respect.

**Networks of Support and Collaboration**

As stated earlier, this briefing acknowledges that what schools can contribute is one aspect of the multi-dimensional efforts across various organisations, policies and practices. Choosing to focus on school initiatives in this instance does not in any way discount or diminish the value of multi-agency collaboration.

Sosu and Ellis (2014) argue that networks of support and collaboration are vital in reducing poverty and closing the attainment gap. The OECD (2015: 17) ‘call for a strengthened “middle” operating through networks and collaboratives among schools, and in and across local authorities and see leadership best operating not only *in the middle* but *from the middle* and, indeed, see an extended middle as essential to allow CfE to reach its full potential’. The Scottish Government, Education Scotland, local authorities, education officers, school management and teachers, researchers in universities and colleges, have a part to play as organisations in themselves, but also in working together to create a shared strategic plan for academic, social and emotional learning. Collaboration with other agencies and charities in the community is also vital.
Sosu and Ellis (2014: 8) also highlight the importance of engaging families and communities and parental involvement programmes. Several strategies have been shown to work well in supporting parents and their children:

- before and after-school support and activities
- high quality full day pre-school education
- helping parents support their children’s learning at home
- funding or sending transport to reduce absence
- designated staff to offer pastoral support
- staff working with some families in the home (Sosu and Ellis, 2014; Macleod et al., 2015; OECD, 2015).

Citing the success of the Extra Mile Programme in England, Chapman (2016) states that the programme worked because there was a framework for collaboration that did not ‘impose prescription’ and that it supported local voices, values, activities. There was high quality support and ‘critical friendship’. Collaboration was encouraged, but not imposed. Again, the running themes of autonomy, respect, trust and focusing on the child at the centre, seemed to underlie the success of this sharing and collaboration. Davis et al. (2014a, 2014b) argue that ‘childhood solutions require a multi-layered approach’.
Effective Assessment and Evaluation

Various education systems around the world have different understandings of, attitudes to and arrangements for assessment and evaluation. Some systems are highly test based and studies have shown that one consequence is that this narrows teaching to content and the use of methods beneficial to attaining predetermined goals and results (Dochy and McDowell, 1997; Shepard et al., 2000; Firestone et al., 2004; Volante, 2004; Lazear, 2006; Sahlberg, 2009, 2011). Other systems have no testing, especially in the primary and early secondary years.

There are two kinds of assessment. Formative assessment is ‘used to support learning as opposed to simply measuring and recording. In this way the process and the outcomes of the evaluation are used to aid future improvement’ (Gillies, 2015). Formative assessments tend to be assessments for learning.

The Assessment is for Learning Programme (AiFL) in Scotland is an example of formative assessment that incorporates teacher observation, oral and written feedback, and pupil self-evaluation and peer feedback. Research by the OECD (2008: 9) suggests that ‘formative assessment can be seen as an essential element of those personalised learning approaches, as it is characterized by the continual identification of and responses to students’ needs’. The Education Endowment Fund (2016) found that ‘Feedback studies tend to show very high effects on learning…but it is important to understand the potential benefits and the possible limitations of the approach. Feedback has effects on all types of learning across all age groups’. Providing feedback is challenging and the EEF (2016) recommends that ‘it should be specific, accurate and clear’.

Summative assessment is ‘usually conducted at the end of a unit or course of study which evaluates what has been achieved, often represented in a mark or grade’ (Gillies, 2015). It occurs in various forms. It can be formal or informal; it can be class based and devised by the teacher or it can be standardised assessments created by specialists (SAT, Pearson, TerraNova and California Achievement Tests). Summative tests or exams can also be centralised, created and set by national governments. Summative assessments tend to be assessments of learning.

The use of assessment is controversial and is often stated as a major cause of increasing teacher workload. Over assessment and inefficient assessment are indeed problematic, but as EEF (2016) studies reveal, well designed assessments used purposefully and sparingly do promote pupil learning and confidence. Assessments ought not to be focused solely on testing a student’s abilities but to help them assess their own learning progress.

When used together, formative and summative assessments both play a part in not only measuring progress, but are tools for providing meaningful feedback and diagnosis of individual strengths and needs. When performance information is used carefully it can inform pupil and school progress. However, the use of performance information for the construction of league tables has long been controversial and its effects demoralising for schools (Wilms and Echols, 1992; Croxford, 1999; Troman et al., 2007; Croxford et al., 2009; OECD, 2013a, 2015: 100).

Donaldson (2009) recommends ‘putting in place arrangements to support teachers in their assessment of learning, so that they and society can have confidence in their judgements and that assessment plays a central role in tracking and facilitating progress in learning.’ This view was echoed by the EEF (2016) – ‘professional development requirements are likely to be necessary for success’.

The OECD (2013a: 2-3), in an extensive international study on evaluation and assessment also makes the following recommendations:
- **Take a comprehensive approach**: All the components of assessment and evaluation – student assessment, teacher appraisal, school evaluation, school leader appraisal and education system evaluation - should form a coherent whole. This will generate synergies, avoid duplication and prevent inconsistency of objectives.

- **Align evaluation and assessment with educational goals**: Evaluation and assessment should align with the principles embedded in educational goals.

- **Focus on improving classroom practices**: To optimise the potential of evaluation and assessment to improve what is at the heart of education – student learning – policy makers should promote the regular use of evaluation and assessment results for improvements in the classroom.

- **Carefully conceive the high-stakes uses of evaluation and assessment results**: The use of evaluation and assessment results should avoid distortions in the education process such as teaching-to-the-test and narrowing of the curriculum.

- **Build consensus**: Ensure that all the stakeholders are involved early and understand the benefits.

- **Place students at the centre**: Students should be fully engaged with their learning and empowered to assess their own progress. The development of critical thinking and social competencies should also be monitored.

According to their findings, the OECD (2013b: 1) contend that schools, school leaders and teachers ought to be granted ‘greater autonomy’ and ‘more responsibility for managing their affairs’. High systems of accountability and scrutiny may improve the performance of weaker or less able teachers but it can stifle the autonomy and creativity and that drives talented educators (Dochy and McDowell, 1997; Shepard et al., 2000; Firestone et al., 2004; Volante, 2004; Lazear, 2006; Sahlberg, 2009, 2011). Schools in Ontario and Finland, for example, give teachers the professional autonomy to decide when written tests and marking are appropriate and when it would be better to use oral or peer-to-peer feedback, and report higher attainment for all pupils (Sahlberg, 2009, 2011; People for Education, 2013). As many studies argue, having no assessment or too much assessment, can have a negative impact on learning, particularly for those pupils who are in danger of being left behind. A balance of formative and summative assessments used appropriately as and when required to inform, and at times measure, seems to be the way forward.

**Early Intervention**

This term refers to ‘a process of assessment and support afforded to (disadvantaged) young children to aid cognitive, social, and emotional development so that their progression is more in line with their peers’ (Gillies, 2015).

There are many studies and reports that confirm that a crucial part of meeting the individual needs of a pupil is in detecting not only strengths, but also potential problems that a pupil faces, as early as possible (Barth, 1999; Kerr et al., 2010; Sahlberg, 2009; 2011; Siraj-Blatchford 2011; Blanden et al., 2015; MacLeod et al., 2015; OECD, 2015; Lepkowska, 2016). ‘There is a much greater impact of intervening before problems become more difficult to reverse’ (The Early Intervention Foundation, 2014). In their research on ‘what promotes better achievement for bright, but disadvantaged students’, Sammons et al. (2015: 3 ) found that ‘early years and primary school experiences, along with better home learning environments in the early years and up to the age of 7, provide a significant boost in attainment for children at the age of 11 and help to counteract disadvantage.’

24
The Endowment Education Foundation (EEF) (2016) produced a useful teaching and learning toolkit which not only looks at attainment outcomes, but also cost effectiveness and the robustness of the evidence base. Their research suggests that, overall, ‘early years and pre-school intervention is beneficial. On average, early years interventions have an impact of five additional months’ progress, and appear to be particularly beneficial for children from low income families’ (EEF, 2016). The EEF (2016) also recommends that, in order for early intervention to work, several points ought to be considered:

1. High quality provision is essential with well-qualified and well-trained staff.
2. High quality provision is likely to be characterised by the development of positive relationships between staff and children and by engagement of the children in activities which support pre-reading, the development of early number concepts and non-verbal reasoning.
3. Extended attendance (1 year +) and starting early (i.e. at 3 years old) is more likely to have an impact than shorter sessions starting later, which on average produce much lower gains.
4. Disadvantaged children benefit from good-quality programmes, especially where these include a mixture of children from different social backgrounds, and a strong educational component.

When the concept of intervening in the early years is then carried forward in schools, especially in the first few years, the chances of success in capturing the missing talent of pupils who are disadvantaged are greater. Through continuing observation and formative assessment, teachers diagnose a child’s strengths and needs early and intervene with strategies that support and guide, in order to manage, minimize or eliminate the specific need/s. If left undetected and unsupported, problems can lead to a pupil’s demotivation, disaffection from school and eventually dropping out of the system early or with little achievement. Early years initiatives can work effectively to build resilience and support pupils who are at risk of failing or being left behind. ‘Shifting investment to effective early intervention supports children and their families, but also creates a positive impact on wider society’ (Early Intervention Foundation, 2014).
ANNEXE A: GLOSSARY OF TERMS

Achievement

‘Success, particularly where it represents a great personal accomplishment. Often wrongly conflated with attainment, which refers to level of achievement and often also unhelpfully narrowed to success in terms of academic assessment. Currently, many educational systems are trying to broaden out the sense of achievement to take account of other areas of success in learners’ lives’ (Gillies, 2015).

Attainment and Attainment Gap

"Attainment is the measurable progress which children and young people make as they advance through and beyond school, and the development of the range of skills, knowledge and attributes needed to succeed in learning, life and work. Many children and young people living in our most deprived communities do significantly worse at all levels of the education system than those from our least deprived communities. This is often referred to as the 'attainment gap'." (Education Scotland, 2016c)

Child-centred

‘In education, giving priority to the interests and needs of children, so distinguished from content-led or teacher-centred approaches’ (Gillies, 2015).

Deprivation

‘The damaging lack of material benefits, typically characterised by poverty, poor housing, bad health, and low wages or unemployment. The term is also used more broadly for any lack, such as emotional deprivation (see disadvantage; socioeconomic)’ (Gillies, 2015).

Disadvantage

‘In educational terms this normally means an unfavourable circumstance that limits educational opportunities or reduces the chances of progress’ (Gillies, 2015).

Hidden curriculum

‘the by-products or unintended outcomes of schooling; the learning experienced by learners which is beyond the formal or planned curriculum perhaps through assimilating the values [and norms] explicitly and implicitly evident in a school and its processes and practices’ (Gillies, 2015).

Research

Research literacy – understanding research

Teachers being research literate refers to the extent to which teachers and school and college leaders are familiar with a range of research methods, with the latest research findings and with the implications of this research for their day-to-day practice, and for education policy and practice more broadly. To be research literate is to ‘get’ research – to understand why it is important and what might be learnt from it, and to maintain a sense of critical appreciation and healthy scepticism throughout (BERA-RSA, 2014: 40)
Research engaged – doing research

The term refers to ‘the involvement of teachers and school and college leaders in the doing of research’. Such engagement may take many forms, from the in-depth analysis of comparative school performance data to the carrying out of Randomized Control Trials in partnership with, and probably under the supervision of, professional researchers in a university department of education' (BERA-RSA, 2014: 40)

Research-rich – drivers of change

The term refers to ‘environments, usually schools and colleges, in which research thrives. Research-rich schools and colleges encourage innovation, creativity and enquiry-based practice, enabling teachers and leaders to drive change, rather than have it ‘done’ to them’ (BERA-RSA, 2014: 40).

Resilience

Resilience is defined as the ‘ability to recover readily from, or adjust easily to, adversity, misfortune, or setbacks of any kind; buoyancy. It is viewed as being a key factor in success in education, particularly for children living in poverty. The importance given to it has been criticised, however, on the grounds that it seems to place the onus on the individual to adapt or cope, rather than focusing on action to address the underlying disadvantage’ (Gillies, 2015).

Socio-economic status

The term can be defined as the ‘position of an individual or group in terms of their social and economic standing. It is a key factor in educational outcomes: the higher the status the better chance of good outcomes; the lower the status the greater chance of poorer outcomes’ (Gillies, 2015).

Wellbeing

The term refers to ‘the state of being happy, healthy, and contented. It has recently become a key student outcome in many education systems and can be linked loosely to Aristotle's concept of eudaimonia. Some critics have questioned if it is used with sufficient regard to social, cultural, or ethnic diversity. It certainly seems unlikely that one definition can be found to cover the range of possible human values it might represent’ (Gillies, 2015).

Whole Child

‘A term used for the educational concern with the personal, emotional and social wellbeing of children and young people as opposed to merely academic concerns’ (Gillies, 2015).
# ANNEXE B: KEY LEGISLATION IN SCOTTISH SCHOOL EDUCATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Key Provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>Education (Scotland) Act 1980</td>
<td>Remains the main legislation for school education, establishing, among other things, the local authority duty to provide adequate and efficient education and parents’ rights and duties in relation to school education of their children. Many provisions of the following Acts are made as amendments to this Act.</td>
</tr>
<tr>
<td>2000</td>
<td>Standards in Scotland’s Schools etc. Act 2000</td>
<td>Provisions include: presumption that children would be educated in mainstream schools, various planning and reporting requirements, provision of pre-school education and statutory recognition of a child’s right to education.</td>
</tr>
<tr>
<td>2004</td>
<td>Education (Additional Support for Learning) (Scotland) Act 2004 (as amended 2009)</td>
<td>This is the key legislation on provision for pupils with additional support needs.</td>
</tr>
<tr>
<td>2006</td>
<td>Scottish Schools (Parental Involvement) Scotland Act 2006</td>
<td>Replaced school boards with parent council and parent forums.</td>
</tr>
<tr>
<td>2014</td>
<td>Children and Young People (Scotland) Act 2014</td>
<td>A wide ranging Act that includes reporting on children’s rights, a Named Person service, a statutory definition of child well-being, extended early learning and childcare, reforms requirements to plan children’s services and introduces a new process for school closures.</td>
</tr>
<tr>
<td>2016 asp 8</td>
<td>Education (Scotland) Act 2016</td>
<td>A wide ranging Act that, among other things, introduces duties in relation to the attainment gap, places the National Performance Framework on a statutory footing, reforms reporting requirements, creates a new process for requesting Gaelic medium education, enables the introduction of the requirement for head teachers to meet the Standard for Headship and enables Ministers to set the number of learning hours in schools.</td>
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ANNEXE C: ATTAINMENT GAP

Figure 4: Link between lower exam attainment and SIMD

This chart illustrates the strength of the link between lower exam attainment and SIMD and how this changed between 2009/10 and 2014/15. It shows the proportion of school leavers attaining at least one qualification at SCQF Level 6 (i.e. Highers), by SIMD in 2009/10 and in 2014/15. It also shows that attainment increases steadily as deprivation decreases. Therefore, the ‘attainment gap’ is not just that the least well off 20% do badly and everyone else attains at similar levels. Rather, the ‘gap’ with the most well-off pupils exists for all other pupils too.

On this particular measure the ‘gap’ has reduced slightly over time — the improvement for the least deprived ‘leavers’ is less than the improvement for the most deprived. This trend looks slightly positive. However, there are different measures and each can convey different results. For example, the SSLN trend shows an increasing gap on some measures over time. Even though it only covers a few years; it might be fair to say that the trend does not move in the same direction across different measures.

<table>
<thead>
<tr>
<th>SIMD</th>
<th>2009/10</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>27.2</td>
<td>41.2</td>
</tr>
<tr>
<td>20-40%</td>
<td>40.4</td>
<td>50.6</td>
</tr>
<tr>
<td>40-60%</td>
<td>50.7</td>
<td>60.3</td>
</tr>
<tr>
<td>60-80%</td>
<td>61.5</td>
<td>69.2</td>
</tr>
<tr>
<td>80-100%</td>
<td>72.8</td>
<td>80.3</td>
</tr>
</tbody>
</table>

Source: Scottish Government 2015
SOURCES


Wall, K. and Hall, E. (in press) *Negotiating partnership working with teacher-researchers – three of the principles of action research networks.*

Wall, K., Higgins, S. and Burns, H. (under review) The role of research in learning and teaching: practitioner enquiry as a catalyst for both teachers’ and students’ metacognitive development. Submitted to *Teaching and Teacher Education* (May 2016).


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