



Employer engagement in education:
Insights from international evidence for
effective practice and future research

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About Education and Employers

Education and Employers is a U.K. charity created in 2009 to ensure that every state school and college has an effective partnership with employers to support young people.¹ As well as undertaking research into the impact and delivery of employer engagement in education, the charity manages innovative programmes to enable schools and colleges to connect efficiently and effectively with employers—including www.inspiringthefuture.org. The charity works in close partnership with the leading national bodies representing education leaders, teaching staff, employers, and employees.

Research into employer engagement in education

As well as publishing new research, Education and Employers provides a free online resource making easily available high quality materials investigating the impact and delivery of employer engagement in education. Resources include a library of relevant articles and reports—many of which have been summarised to pick out key findings—papers, and videos from the Taskforce research conferences and free London seminar series, as well as Taskforce publications and a regular e-bulletin of relevant research announcements: www.educationandemployers.org/research-main.

For research updates and news of international developments, follow the team on twitter: [@Edu_EResearch](https://twitter.com/Edu_EResearch).

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¹ www.educationandemployers.org

Summary

This study, commissioned by the Education Endowment Foundation (EEF), is designed to review current evidence on the most effective ways in which employers can support schools to improve pupil educational and economic outcomes. It is a study in three parts. It aims, first, to conceptualise employer engagement in education as a strategic tool, developing a new typology to make sense of it, second, to review high quality research literature through the lens of the new typology, and, finally, to discuss the practical implications of the study for policy-makers and practitioners. The paper, moreover, seeks to provide an evidenced overview of promising approaches and programmes to support schools intending to undertake activities with employers. The report assesses the prospective impacts of employer engagement in terms of both educational and economic outcomes, focusing on pupils in both primary and secondary education.

Specifically, the study:

- identifies the different types of employer engagement in terms of what is intended by policy-makers and users and the related evidenced outcomes;
- identifies areas and interventions of promise, highlighting where further research is needed; and
- identifies key features of successful practice.

Part 1: A typology of employer engagement in education

The study begins by reviewing academic and policy literature to offer a typology of employer engagement focused around outcome areas highlighting what is potentially changed for children and young people in terms of educational and economic outcomes.

The paper draws on theoretical and policy analyses to understand employer engagement in education primarily as an activity in which young people engage in order to gain something that everyday schooling is unable to offer. Drawing on Stanley and Mann (2014), employer engagement activities can be conceived of through the lens of everyday teaching and learning.

Employer engagement can be:

- *supplementary*, directly supporting conventional teaching and learning approaches to achieve established learning outcomes (for example, reading support programmes);
- *complementary*, offering alternative means to achieve established learning outcomes (for example, mentoring programmes aimed at helping students improve attainment); and
- *additional*, offering means to achieve learning outcomes additional to those found in conventional teaching and learning (for example, enterprise activities aimed at developing employability skills or entrepreneurial capabilities).

Literature suggests that employer engagement can often be expected to provide beneficial educational and economic outcomes for young people, and that such engagement—for both primary and secondary pupils—is coloured by individual responses and perspectives on the experience.

In primary education, employer engagement can be divided between activities aimed at developing pupil knowledge and skills and those which are designed to influence attitudes and aspirations. In secondary education, activities are more focused on achieving economic outcomes. Approaches at both age levels can best be understood through theories of human, social, and cultural capitals. The conceptual approach

helps make sense of school-mediated employer engagement as it allows it to be considered as a resource which relates to the existing knowledge, skills, and attitudes possessed by a young person. If an intervention relates to areas already familiar to young people, impacts might be expected to be lower than where information and experiences are new and different. Equally, how well equipped a young person is to take meaning from an intervention will influence the extent to which they fully engage in the opportunities provided by engagement activities.

This conceptual approach allows a deeper insight into the character of effective practice. It stresses, for example, the importance of authenticity and volume in young people's encounters with employers and the significance of variation in exposing students to different types of activity. Moreover, best practice would presume personalisation of employer engagement approaches which should be delivered within the context of professional careers provision. Finally, the analysis directs that young people should engage with employers from an early age, drawing links between education and employment from primary school onward, and be asked to review the quality of their experiences: did they learn anything new and useful?

The typological approach is designed to be:

- *practical*—offering school staff a clear sense of the purposes behind the different uses of employer engagement, enabling staff to identify rationales for selecting different activities to meet objectives;
- *comprehensive*—being relevant to professionals working at all levels of education with pupils of all types; and
- *evidenced*—that each outcome area sits comfortably within the current body of conceptual and evaluative research literature.

In creating this typology, three challenges persist when making sense of the different types of intervention available to schools and colleges: activities can achieve multiple outcomes, different young people can be expected to respond to different activities in different ways, and institutional context matters.

It is possible, however, to disentangle the outcomes associated with the enhanced capacity of young people to engage in education and navigate progress through schooling into ultimate employment into a typology focused around four key outcomes. At its most essential, it offers practitioners objectives to steer the selection and delivery of employer engagement activities related to realisable outcomes.

The four key outcomes to be considered in relation to employer engagement in education are to help young people by:

- enhancing understanding of jobs and careers;
- providing the knowledge and skills demanded by the contemporary labour market;
- providing the knowledge and skills demanded for successful school-to-work transitions; and
- enriching education and underpinning pupil attainment.

Part 2: Employer engagement in education, international literature review

The outcome-driven typology creates the structure for a review of research literature published in OECD countries since 1996 to identify areas of promising practice. The review mirrors the methodology utilised in the EEF publication 'Careers education: International Literature Review' (Hughes *et al.*, 2016). Using keyword search terms, the review made use of databases available through the University of Warwick, notably EBSCO and Scopus, and considered English-language research publications appearing in OECD countries from 1996 describing studies which adhered to experimental or quasi-experimental designs. In total, 42 individual studies were identified, mostly U.S. or U.K. studies focusing overwhelmingly on

secondary education. They included 75 distinct assessments of episodes of employer engagement in education related to career events, work-related learning, mentoring, work experience, enterprise activities, job shadowing, reading partners, recruitment skills, recruitment assistance, and workplace visits. Of these, 35 were found to provide evidence of largely positive outcomes for young people, 40 were found to provide evidence of mixed outcomes, and none offered evidence of largely negative outcomes.

The review highlights that while the literature has many weaknesses, it is no longer possible to dismiss it out of hand. The literature tells a consistent story. Many young people taking part in episodes of employer engagement may be expected to benefit from the experience, however, benefits can by no means be taken for granted: they are likely to vary by who the young person engaging in the activity, the type of school they attend, the age at which they engage, and what they thought about the quality of the activity in which they participated.

Abstracts for the 42 publications are given. Each is annotated with details of the employer engagement activities considered by the study highlighting which of the four outcome areas is most relevant.

Part 3: Towards effective practice in employer engagement in education

There is nothing new about employer engagement in education. It has long been part of educational experiences in the U.K. and internationally. This study reviews policy literature as well as qualitative and quantitative studies in order to make sense of employer engagement and offer a strategic perspective on its use within such provision. It follows Stanley and Mann (2014) in understanding employer engagement as a process through which members of the economic community can engage in the educational experiences of young people under the aegis of their school or college. By considering the policy and research literature, it is possible to identify four broad outcome areas in which young people are impacted by employer engagement:

1. Enhancing understanding of jobs and careers

Broadening and raising career aspirations and understanding of personal routes into different occupations (and the realism of such career ambitions), enabling young people to better navigate progression through education, informing decision-making on what to study, where to study, and how hard to study—improving understanding of the purposes of education and qualifications.

2. Providing the knowledge and skills demanded by the contemporary labour market

Enabling young people to build complementary skills such as creative problem-solving and team-working through applied learning, work-related experiences, and opportunities to understand the operation of contemporary workplaces.

3. Providing the knowledge and skills demanded for successful school-to-work transitions

Preparing young people to optimize their chance of success in the competitive early labour market by providing them with authentic, relevant experiences and practical insights into how recruitment processes work and how contemporary workplaces operate.

4. Enriching education and underpinning pupil attainment

Harnessing the capacity of employer engagement to supplement teaching resource within the classroom and drawing on employer input to contextualize learning, but most importantly

presenting young people with authentic testimony on the connection between educational inputs and employment outcomes.

A review of the 42 studies shows that young people may be expected to gain something of value from their participation in employer engagement activities: economic benefits as young adults can be sizeable despite typically modest gains in academic achievement. While individual responses will necessarily differ, most commonly, an authentically-perceived experience of the labour market drives positive change.

The insight that employer engagement can be effectively understood through the lens of social and cultural capital, and that encounters with new people can lead a young person to change an important element of their own thinking about themselves and their own sense of agency, finds validation within the still-limited research literature. It enables practical advice to be offered to schools and colleges seeking, for example, to use employer engagement to enhance young people's understanding of jobs and careers. To be effective in this domain, provision will be authentic, real world, frequent, valued, contextualized, personalized, and begun young. Across the four outcome areas, employer engagement can be harnessed strategically to support young people's positive development towards coherent aims.

Findings from the updated literature review show that while there is a literature making use of experimental and quasi-experimental research methodologies, it remains limited. In particular, opportunities exist for further research into primary school provision and the uses of employer engagement to understand skills for recruitment, skills for work, and career understanding. Future research would also benefit from taking account of the social backgrounds of recipients of employer engagement in education as well as the quantity and quality of activities.

Introduction

Purpose

Education and Employers Research was commissioned by the Education Endowment Foundation to review current evidence on the most effective way for employers to support schools to improve pupil educational and economic outcomes. This review, consequently, aims to identify the most promising approaches and programmes that employers or employees can undertake to support schools. The findings are designed to inform future grant-making and guidance issued to schools and employers by the Foundation and its partners. The review covers all types of volunteering by employers and employees within primary and secondary schools aimed at helping children and young people to learn and progress. A particular area of the EEF's interest relates to primary school provision.

The review addresses key questions posed by the EEF:

- What are the different ways that employee volunteers can support schools?
- To what extent are existing practices informed by evidence?
- What is the quality of existing evidence for practices and programmes that impact on school outcomes?
- Which interventions and programmes have the greatest promise for improving school outcomes, particularly for disadvantaged children in England?
- Where is further research needed?
- What are the features of successful employer volunteering with schools?

Approach

The following discussion, Part 1 of the study, draws upon existing research and policy literature to make sense of employer engagement in education. It concludes by offering a typology of employer engagement focused around four outcome areas highlighting what is potentially changed for children and young people in terms of their outcomes.

The typology is followed, in Part 2, by a review of existing literature using experimental and quasi-experimental methodologies. English language literature, published since 1996, is considered from across the OECD countries. This review draws, in particular, on the EEF-commissioned publication 'Careers Education: International Literature Review' (Hughes *et al.*, 2016). This additional analysis presents further insights regarding the four key outcomes enabled by employer engagement in educational provision as described in Part 1.

The report concludes, in Part 3, by offering an overview of the evidence on employer engagement in education, exploring its strengths and weaknesses to draw out insights for effective practice and future attention.

Part 1: A typology of employer engagement in education²

What is employer engagement in education?

The phrase ‘employer engagement in education’ provides a contemporary means of describing an old phenomenon. For decades, in the U.K. and overseas, employers and employee volunteers have worked with all types of schools and colleges to support the educational experiences and progression of young people. Work experience, as a funded government initiative, was introduced in England in the early 1960s and codified in 1973 legislation through the Education (Work Experience) Act, 1973. Young Enterprise, the most venerable of U.K. organisations aimed at enhancing the entrepreneurial skills of teenagers, commenced its operation in the 1960s (Kingston University, 2013). Over the last fifty years, governments of different colours have, for different reasons, encouraged, enabled, and, at times, required state schools and colleges to work with employers. In England, major interventions include:

- the Technical and Vocational Education Initiative of the 1980s and 1990s (Moon and Richardson, 1984; Bridgwood, 1987);
- the statutory requirement for work-related learning at Key Stage 4 accompanied by new qualification development in the 2000s (Huddleston and Stanley, 2012); and, more recently,
- post-16 reforms in the 2010s (HMG, 2013);
- the Inspiration Agenda (DfE, 2013);
- the launch of the Careers and Enterprise Company (DfE, 2014); and
- new Technical Education levels (IPTE, 2016).

While predominantly focused on the secondary sector, at times government has also targeted primary provision and, certainly, primary schools have their own rich track record of working with the local economic community (Wade *et al.*, 2011, p. 43).

To Stanley *et al.* (2014), *employer engagement in education* is a means of understanding a purposeful and structured interaction.

‘[It] describes the process through which a young person engages with members of the economic community, under the auspices of their school, with the aim of influencing educational achievement, engagement and/or progression out of education into ultimate employment’ (p.1).

As a phenomenon, it is connected to, but distinct from, a range of related approaches to education and training:

‘Employer engagement in education can be distinguished from work-based learning, which is usually taken to describe learning that takes place through employment, for example through apprenticeships [...] Employer engagement in education [can also be distinguished] from enterprise education, careers education and personal finance education. All of these activities

² The authors are grateful to Dr Deirdre Hughes (University of Warwick) for her critical comments on Part 1 of this report.

can be designed to include a contribution from employers [but] these schemes can be run without the involvement of employers and therefore do not necessarily constitute employer engagement. [...] We can distinguish the purposes and the language of employer engagement from that of work-related learning, but there is evidently a considerable overlap' (p. 1).

What is essential to employer engagement in education is the active involvement of members of the economic community within an educational context:

'What is entirely distinct is the matter of ownership. Employer engagement is understood as an initiative that is, in some sense, driven or at least authorized by employers as opposed to government or educationalists. [Consequently, we] can distinguish four dominant ideas:

- 1. The educational system cannot, without intervention from employers, fully accomplish its responsibility to educate young people so that they obtain employment, fulfil their potential and contribute fully to society and the economy.*
- 2. Employers and employees have an interest in, and a capability for, contributing to the education, training and progression of young people.*
- 3. Various kinds of collaboration or partnership can be put in place so that these two systems (education and the economic community) will better be able to achieve their own goals.*
- 4. The aims of government will be served by supporting these collaborations and partnerships.'* (Stanley et al., 2014, p. 3.)

Stanley and colleagues therefore argue that employer engagement in education is a *process* through which children and young people in educational settings (the democratic institution of the school or college) connect with members of the local economic community towards some meaningful end which is unlikely to be better achieved through traditional approaches to education. Importantly, it is not a matter of engaging young people narrowly with *business* (the private sector) but with all those who are employers, or who are employed, within the economic community (effectively, all those who generate financial returns in exchange for their labour) across all sectors (private, public, and third sector; large companies, small and medium sized enterprises, micro businesses, and self-employment from all occupational areas). It includes, and is often understood as, activities through which young people encounter the world of work under the aegis of their educational institution.

Exclusion criteria: governors, teacher professional development, and curriculum design

Given the emphasis of the EEF on improving the attainment and employment outcomes of young people through more effective teaching and learning, the focus of this review is on the direct interaction between a young person and the economic community. It does not cover employer engagement with educational institutions or educational content which can be expected to have some indirect influence on outcomes experienced by young people. This review does not, therefore, cover three important areas of employer engagement in schooling, each of which would benefit from further sustained investigation.

First, it does not include the role of employee volunteers such as school governors or trustees, nor of employers as facilitators of the continued professional development of teaching staff. Work by James and

Percy (2010) helped to define the role of the 'employee governor', identifying volunteers who bring skills from the world of work relevant to school leadership into their oversight roles. 'Employee governors' may, or may not, have personal connections to the institutions they serve and may, or may not, have the active support of their employer. Studies have drawn relationships between the quality of governance (including the skills found on governing boards) and school performance (Balarin *et al.*, 2008). Notably, James *et al.* (2010) argue—on the basis of statistical analysis of school performance and school survey data—that the 'level of effectiveness of primary school governance is linked clearly and positively to the level of pupil attainment' (p. 3). While such links were viewed to be weaker at secondary level, in all cases: 'The lack of a capable governing body is not a neutral absence; it is a substantial disadvantage for a school' (p. 93). Attempting to disentangle the unique contributions of employee governors within governing boards, which may include representatives of parents, school staff, and community stakeholders, Punter and Adams (2010) have surveyed the attitudes of head-teachers and chairs of governing boards towards employee volunteers recruited through government-funded initiatives points. They find a consistently strong perspective that such employee volunteers play significant contributions on boards (see also SGOSS, 2011). As school autonomy grows, the need for more highly skilled governing boards has been recognized by government in England leading to long-standing funded campaigns to enable employee volunteers to be recruited by governing boards (DfE, 2015a).

Second, the subject of employer engagement in the training and CPD of teaching staff has been subjected to little analysis. One of the most thorough reviews of such activities, 'Industrialists and Teachers: Case Studies and Developments' (Forrest *et al.*, 1992) concludes with an ultimately unheeded call for methodological evaluations of the impact of such partnerships (p. 210).

The third excluded area is curriculum design. Literature is stronger with regard to employer engagement in curriculum development. Governments have over recent years placed significant emphasis on the importance of employers being involved in the design of programmes of work-related learning. This is the expected role of the new Panels of Professionals due to specify standards for new college-based routes in technical education emerging out of the 2016 Sainsbury Review. Historically, such a role has extended from supporting the development of overarching learning objectives to the 'development of assignments, teaching materials and projects linked to work placements' (Ofsted, 2009; IPTE, 2016; see also, Huddleston and Oh, 2004; Ofsted, 2010). The interest extends beyond the U.K. The Harvard Graduate School for Education, for example, calls for employers to be 'deeply engaged in multiple ways' within the U.S. curriculum, setting standards and designing programmes of study (Symonds *et al.*, 2010). However, while employers are often invited to comment on qualification designs, their systematic involvement is rare and evaluation of the impact of the involvement rarer still. In one important study, Huddleston and Laczik (2012) reflect on employer engagement in the development of a significant new qualification aimed at enhancing the long-term employment prospects of young people through close engagement with employers in curriculum design and delivery. Diplomas were developed in England over the first decade of the twenty-first century as 'employer-led' qualifications for young people aged 14–19. Huddleston and Laczik (2012) reflect on interviews with participants from supportive employers within the curriculum design process. The authors highlight tensions in relationships between employer-dominated advisory groups, the Diploma Development Partnerships (which oversaw qualification development), and technical experts in qualification design from awarding bodies. Employers at times struggled to understand the full detail of qualification design. Moreover, it was often larger employers (often with vested interests) that were able to identify and devote staff to attend meetings and engage most forcefully in the design process. Smaller enterprises often struggled for representation, raising questions over how representative the Development Partnerships could really claim to be. Little analysis has, moreover, been devoted to the academic and economic outcomes for young people stemming from the process of curriculum design.

Employer engagement as activity

Being at heart a *process*, employer engagement in education is most recognisable within school-mediated activities bringing young people into contact with the labour market. Furthermore, government policy has commonly focused attention on specific activities—such as the recent focus on work experience within post-16 provision in England (DfE, 2015a), employer mentoring (Prime Minister’s Office, 2016), or, under the last Labour administration, enterprise education (McLarty *et al.*, 2010). When governments have called for wide-ranging and systemic engagement between educational institutions and employers, such as in the Inspiration Agenda (DfE, 2013) or in the recommendations of the 2008 National Council for Educational Excellence (NCEE, 2008), the emphasis commonly focuses on named activities.³

At different times, for different policy reasons, governments have presented schools and other stakeholders with lists of such activities linked to broadly defined objectives. Such an approach consistently presents challenges to those trying to make best sense of employer engagement and its most effective usage. For example, current statutory ‘Careers Guidance and Inspiration’ for English secondary schools highlights a wide range of differing activities, some involving employers, some not, which can provide experiences of value to young people:

‘Every school should engage fully with their local employer and professional community to ensure real-world connections with employers lie at the heart of the careers strategy. Different interventions will work for different schools and pupils, but it could mean in practice:

- *Mentoring and coaching*
- *Speakers from the world of work in schools*
- *An insight from Jobcentre Plus, or the National Careers Service into the labour market and the needs of employers*
- *Workplace visits and work experience placements*
- *Work ‘taster’ events such as games and competitions*
- *Careers fairs and career networking events*
- *Access to open days at further and higher education institutions*
- *Access to creative online resources and labour market intelligence*
- *Help with basic career management skills like CV writing, CV building, job searches and job interviews.’* (DfE, 2015b, p. 8.)

The list is illustrative of the diversity of activity which is understood as ‘employer engagement in education’: the phrase covers both very short, careers-focused interactions (perhaps an interaction at a

³ The National Council for Educational Excellence (2008) recommended that ‘every primary and secondary school and college should have an effective relationship with business’ (p. 6) with greater collaboration in relation to school leadership (governance and teacher CPD), numeracy and literacy (volunteer support programmes), Science, Technology, Engineering and Maths provision (ambassadors and learning materials), and employability skills and enterprise education (work placements, role models in school, mentoring, and employer-led careers provision).

jobs fair) to work experience placements lasting two weeks or longer; it also ranges from interventions requiring considerable preparation and management (mentoring) to those requiring little prior management, for example pupil access to online labour market information (LMI).

Making sense of employer engagement: typological approaches

Consequently, from a policy perspective, it is by no means a straightforward process to disentangle the unique contributions that different employer engagement activities can be expected to have on young people. Indeed, as seen in the current DfE statutory guidance (*op. cit.*), a degree of ambiguity is embraced and, as this report argues, the instincts of policy-makers are correct.

The aim of this report is to make sense of employer engagement from the perspective of the practitioner—the senior leader, classroom teacher, or careers teacher/co-ordinator or careers adviser working in schools—in particular, those who are challenged by government to engage employers in the educational experiences of young people.

In the discussion that follows, a range of different approaches to making sense of employer engagement (rooted in public policy and academic literature) are presented and compared. The advantages and limitations of different approaches or typologies are explored against key principles.

It is argued that a useful typology will be:

- *comprehensive*—relevant to school practitioners from primary to secondary education and across all disciplines;
- *practical*—offering professionals a helpful mechanism for decision-making about optimal use of employer engagement; and
- *evidenced*—drawing on robust methodologies underpinning insights.

As noted, typologies of employer engagement activities are numerous in the policy and research literature. For example, in one approach the Chartered Institute for Personnel and Development (CIPD, 2012) surveyed its members on how demanding different employer engagement activities were on employers. The study highlighted the view that in-workplace activities (work experience, job shadowing, workplace visits) were more demanding for employers than in-school events (reading and number partners, supporting recruitment skills or enterprise competitions). Staff providing career talks in-school was the least demanding activity that could be asked of employers (CIPD, 2012, p. 20). Typologies could also be designed to explore how demanding different activities are for schools and colleges, measuring the variations in transaction costs associated with moving an individual young person through a process whereby they engage with employers. For example, across all employer engagement activities, transaction costs relate to finding the most suitable volunteer or workplace with which to engage, but in some activities further financial costs are incurred. In mentoring, for example, schools must ensure that mentors are appropriately trained, that safeguarding checks are undertaken, and that meetings are properly managed (Hooley, 2016). Historically, moreover, schools have needed to ensure that work experience placements are checked for health and safety compliance (DCSF, 2010). Such costs (in time and money) are additional to those incurred in simply finding the right person or organisation with which to engage, as, for example, in a careers fair. However, such an approach would only be seen as *practical* should the outcomes associated with employer engagement activities, for different types of pupil, be seen as broadly identical. This is not the case.

Employer engagement in education: objectives and outcomes

A review of policy and research literature helps to disentangle the intended *objectives* and evidenced *outcomes* of employer engagement in education. Stanley *et al.* (2014) argue, in light of a review of government policy interventions, that such interventions can be clustered around four primary stated objectives:

- to improve pupils' preparedness for the working world;
- to address labour market skills shortages;
- to enhance social mobility; and
- to improve pupil engagement and attainment (p. 5).

The authors draw, therefore, on examples of policy interventions from around the globe to illustrate approaches to employer engagement designed to enhance outcomes related to both educational achievement and ultimate employment. A second study looks at the question from the perspective of impact. The recent EEF-commissioned report 'Careers Education: International Literature Review' (Hughes *et al.*, 2016) reviewed research published after 1996 across the OECD countries related to 'Careers-focused school- or college-mediated provision designed to improve students' education, employment and/or social outcomes'. The review focused attention on measurable educational and economic impacts related to robustly evaluated interventions which included such employer engagement activities as work experience placements, job shadowing, and mentoring. The two studies, focusing respectively on *objectives* (Stanley *et al.*, 2014) and *outcomes* (Hughes *et al.*, 2016), offer a helpful place from which to begin making sense of employer engagement in education.

Employer engagement to achieve educational outcomes

Given the fact that it is the Department for Education (and its predecessors) that has most consistently funded action to engage schools with employers in England, a distinct emphasis within employer engagement policy has focused on educational outcomes. For example, the statutory requirement for Work-Related Learning at Key Stage 4 (QCA, 2004) was formed explicitly around the objectives of *learning* about work, *learning* through work, and *learning* for work and was 'defined in terms of curriculum and pedagogy – of what was to be learned and how' (Stanley, 2012; Stanley *et al.*, 2014). Among the 'underlying aims' of Work-Related Learning as a pedagogic approach was 'to raise standards of achievement of students' and 'to increase the commitment to learning [and the] motivation and self-confidence of students' (DCSF, 2009, p. 6). Indeed, government sought to embed employer engagement within programmes of study and qualifications which were explicitly designed, and delivered, with employers. These included the Increased Flexibility Programme at Key Stage 4 (Ofsted, 2004), the 14–19 Diploma (DfES, 2005), and the Young Apprenticeships (DCSF, 2009). Indeed, these programmes were subjected to significant independent evaluations focused to a significant extent around the educational success of teenage participants (Stanley *et al.*, 2014, pp. 9-10; O'Donnell *et al.*, 2006; Golden *et al.*, 2006; Golden *et al.*, 2010; Lynch *et al.*, 2010).

Does employer engagement increase attainment?

The recent EEF literature review (Hughes *et al.*, 2016) provides a systematic review of careers education activities undertaken across the OECD countries which had been evaluated using experimental or quasi-experimental methodologies. The review:

'identified 45 research studies providing reliable assessments of the impact of careers education on the educational achievement of young people. Of these, which looked in total at the impact of 67 different interventions, 60% provided largely positive findings evidencing improvements in educational outcomes. Only one study suggested negative impacts. The remainder provided either mixed results or no clear patterns of achievement. The literature is strongly focused on secondary education with 44 studies providing comment on careers-focused mediated provision received by pupils between the ages of 12 and 19' (p. 4).

Of the 67 interventions considered, 47 related to activities wherein the engagement of employers would be reasonably expected (work experience, mentoring, job shadowing, enterprise competitions, work-related learning). Of these 47 interventions, the authors found largely positive findings evidencing improvements in educational outcomes in 27 studies (60%) and mixed results in the remainder (p. 24).

Table 1: Educational outcome assessment by intervention likely to involve employer engagement (Hughes *et al.*, (2016) 'Careers Education: International Literature Review', London: EEF)

Intervention area	Number of studies	Generally positive outcomes	Mixed results	Generally negative results
Enterprise activities	3	–	3 (100%)	–
Job shadowing	3	1 (33%)	2 (67%)	–
Mentoring	13	8 (62%)	5 (38%)	–
Work experience	4	4 (100%)	–	–
Work-related learning	24	14 (58%)	9 (38%)	1 (4%)
Total	47	27 (58%)	19 (40%)	1 (2%)

In three of five of the U.K. studies adjudged to find evidence of positive educational outcomes, the average impact on attainment is described as 'modest'. It should be recognised, of course, that averages will disguise outcomes that may well be very different by pupil characteristic or by delivery mode (Hughes *et al.*, 2016, pp. 22-26).

How employer engagement can enhance attainment

From an educational perspective, Stanley and Mann (2014, pp. 38–39) argue that employer engagement in education can be conceived within the context of teaching and learning in three ways:

1. Supplementary: employer interventions are supplementary when they are intended to directly support the conventional teaching and learning processes that are deployed to achieve

established learning outcomes as recognised by qualifications.⁴ For example, reading support programmes, where employer volunteers listen to pupils reading, aim to supplement the conventional processes of classroom learning.

2. Complementary: employer interventions are complementary when they offer alternative processes that are intended to achieve established learning outcomes as recognised by qualifications. Mentoring programmes can work in this way (Hall, 2003). For example, Miller (1998) found that employee mentors helped pupils to improve attainment.
3. Additional: employer interventions are additional when they are intended to achieve learning outcomes in addition to conventional learning outcomes as recognised by qualifications. Interventions that aim to develop employability skills or entrepreneurial capability are examples of this additionality. Although these kinds of outcomes are not usually recognised by qualifications, they may nevertheless be of value to young people, employers, or policy-makers.

This suggests that as well as simply providing extra resources (more people in the learning process to support the work of paid teaching professionals), employer engagement contains within it experiences that can offer something new and different to accepted practice in teaching and learning. In addition, pedagogic approaches harnessing such experiences might, at times, be expected to offer learning experiences that deliver outcomes more effectively than traditional approaches.

The authors of the 'Careers Education: International Literature Review' (Hughes *et al.*, 2016) found that a very wide range of measurements had been used to make sense of improvements in academic achievement making firm assessments of the extent of impact difficult. Turning to the question of how sense can be made of positive impacts observed, the authors argue:

'The literature reviewed here has relatively little to say about why interventions related to careers-focused education have, on average, positive impacts on the attainment of young people. It does, however, broadly support the hypothesis that careers education helps young people to better understand the relationship between educational goals and occupational outcomes, increasing pupil motivation and application.'

[...]

In attempting to understand evidence of improved academic attainment, Hughes and colleagues (2004) and Hooley and colleagues (2014) drew on the earlier work of Killeen and colleagues (1999) who theorised "that the relationship of career guidance to attainment is due to its capacity to help young people to:

- *understand the relationship between educational goals and access to occupational goals;*
- *clarify valued outcomes;*
- *set attainable educational goals; and*
- *understand the relationship between current educational effort and performance to the achievement of educational and career goals."*

⁴ It is acknowledged that many schools may use the term 'supplemental' with regard to how teaching assistants should be deployed to deliver targeted interventions. A different understanding is provided here.

Career guidance that complements careers education programmes can therefore help individuals to set achievable goals and identify the practical steps that can be taken towards these goals. This in turn provides “meaning making” and motivation, leading to greater academic engagement and attainment’ (Hughes, et al., 2016, pp. 4, 27).

In this way, returning to Stanley and Mann’s three-fold conception of the impact of employer engagement within teaching and learning, it is suggested that effects are best understood as being *complementary*. Employer engagement offers a new perspective on the value of education and the qualifications being undertaken. It is a perspective shared by Andreas Schleicher, the OECD’s Director of Education and Skills:

‘Work experience and other forms of employer engagement demonstrate to young people the links between what they do in the classroom and how those skills ultimately will be used in the labour market. For young people, and for their teachers, that is a great motivator’ (cited in Mann and Huddleston, 2015, p. 28).

It is a view shared by University of Manchester sociologist Carlo Raffo who, over a series of ethnographic studies, has drawn on social capital theory to illustrate the means by which a young person can change conceptions of who they are and who they might become following exposure to authentic interactions with the labour market. Based on a study of young people engaged in programmes of extended work experience, Raffo and Reeves (2000), for example, argue:

‘What we have evidenced is that, based on the process of developing social capital through trustworthy reciprocal social relations within individualized networks, young people are provided with an opportunity to gain information, observe, ape and then confirm decisions and actions with significant others and peers. Thus, everyday implicit, informal and individual practical knowledge and understanding is created through interaction, dialogue, action and reflection on action within individualized and situated social contexts’ (Raffo and Reeves, 2000, p. 151).

Such an impact and theory of change resonates with more subjective data from other sources. For example, Mann and Dawkins (2014) summarise the findings of three surveys (taking place between 2001 and 2012) of representative samples of secondary school teaching staff exploring the perceived impact of participation in work experience placements on pupil academic achievement. In each study, upwards of two-thirds of respondents agreed that participation in placements increased the academic motivation (to an uncalibrated extent) of students working at Key Stages 4 and 5 (three studies) with approximately half (two studies) feeling that work experience increases the chances of pupils on the borderline of achieving five GCSEs (A*–C) of achieving the target. Two relevant surveys of teenagers find similar results (CBI, 2007; National Support Group, 2008) with majorities of pupils aged 14–16 agreeing that they better understood the value of education for employment after work experience, or testifying that they worked harder on schoolwork after placements. The results are echoed in the recent analysis of data drawn from the 2012 Programme for International Student Assessment (PISA) study undertaken by the Organisation for Economic Co-operation and Development by Kashefpakdel *et al.* (2016) which considered data from six countries (Australia, Belgium, Canada, Denmark, Finland, and Ireland). Using regression analysis, the study found consistent statistically significant relationships between participation in career development

activities (job shadowing, internships, and notably participation in job fairs) and more positive attitudes towards the value of education.⁵

Which types of young people are likely to benefit most?

Full data is currently unavailable on how different types of young people respond to employer engagement interventions. Reasonably reliable survey data does, however, suggest that it is lower achievers who might have most to gain—a perception supported by interview data with teaching staff in England's secondary schools. Moreover, testimony from such professionals suggests that learners of different abilities respond in different ways to different employer engagement activities.

The findings of a survey of 500 Key Stage 4 teachers from 250 maintained secondary schools in England undertaken by the Qualifications and Curriculum Authority (QCA, 2004a; QCA, 2004b) suggest that those young people gaining most from employer engagement are likely to be in the lowest performing quartile of the pupil population. Asked whether 'work-related learning' (which would include a significant element of employer engagement) was 'highly significant' to helping different ability pupils in 'achieving their life goals', over 60% of responding senior managers in non-selective state schools said that this was the case for pupils in the lowest attainment quartile compared to some 25% for pupils in the upper quartile. Asked how important they thought that work-related learning was within the KS4 curriculum for pupils quartiled by attainment level, 81% of responding teachers thought it to be very important to pupils in the lower attainment level quartile compared to 33% in the upper attainment quartile.

The study is rare in that it explores the question of comparative benefit with a reasonably large cohort of teachers. The results suggest that the relationship between employer engagement and academic achievement is primarily due to pupils changing their attitudes as a result of engagements with a working world outside of, and fundamentally different from, the classroom. This is a perspective highlighted by Mann and Dawson (2014) in qualitative focus group exploration of the issues with teaching staff:

'In discussions, participants returned to a number of key points:

- *Pupils often gained something new and distinct from their engagements with employers*
- *They were highly attentive to the views expressed by employers on the value of education and qualifications*
- *Employer engagement impacts on achievement primarily through increasing pupil motivation*
- *The greatest impact can be expected among middle and lower level achievers – as high achievers are commonly highly motivated already' (Mann and Dawson, 2014, p. 4).*

Such an impression is supported by a high quality study of work-related learning programmes—the 2008 review of United States Career Academies (Kemple with Willner, 2008). The study follows, over eight years, 1,500 young people who at the start of the project all expressed interest in enrolling in a Career

⁵ Understanding of the relationship between episodes of employer engagement and academic achievement will be significantly improved following the publication (in 2017 by Education and Employers Research) of survey data exploring relevant questions from 1,000 members of teaching staff at primary and secondary level.

Academies programme. Half of those interested were randomly selected for inclusion on the programme and half allocated to a control group. Both groups (intervention or control) graduated from high school with strong (and comparable) academic results, progressing in similar proportions into higher education—the Career Academies sample did not attain more highly than the control group. However, it did go on from this starting point to do significantly better in the labour market, earning on average 11% more than control group peers up to eight years after high school graduation. The study suggests that researchers may be well advised to look for improvements in attainment linked to employer engagement activities among those young people whose motivation to engage in education is weaker and whose prior attainment is lower. High-achieving, highly motivated pupils who see the value of qualifications and education to their long-term success and immediate sense of self-worth and well-being are still likely to benefit from employer engagement activities, but in different ways from their peers and less in terms of enhanced attainment.⁶

Which employer engagement activities are most effective at increasing student attainment?

Evidence on the comparative efficacy of employer engagement activities to enhance attainment is limited. The issue of attracting employers to get involved in the delivery of school-mediated initiatives—such as enterprise activities, job shadowing, mentoring, work experience, and work-related learning—was explored by Hughes *et al.* (the ‘Careers Education: International Literature Review’). They identified a number of studies that were sufficiently robust to enable conclusions to be drawn regarding which types of activities might achieve this aim. There is a limit, however, to the extent to which firm conclusions can be drawn as (a) the studies were limited in number (only two of the five areas consider more than five analyses), (b) involved varying degrees of employer engagement, (c) were from a number of different countries, and (d) explored some very different interventions. In Part 2 of this study, new analysis of the literature focusing specifically on episodes of employer engagement is offered.

The 2016 publication, ‘Towards an employer engagement toolkit: British teachers’ perspectives on the comparative efficacy of work-related learning activities’ (Mann *et al.*, 2016) presents survey data from 390 secondary school teachers; the survey explicitly sought professional views on the comparative value of different interventions to enhance academic achievement. Respondents were asked to select, from a list of 16 work-related activities (including many relating to employer engagement in education), those that took place in their own school. They were then presented with a new list of activities, of which they had knowledge, and asked to select which, if any, were in their view effective in achieving a range of educational and employment outcomes. Asked about the capacity of interventions to ‘improve student attainment’, eight different activities were named by a quarter or more of respondents with experience of an intervention as being an effective means of contributing towards the outcome.

⁶ High achievers, however, may expect to secure benefit from employer engagement in securing admission to undergraduate programmes of study at more selective higher education institutions (HEIs). Many HEIs call for relevant work experience within admissions requirements (Rehill, 2016; Mann *et al.*, 2011) and it is well established practice within independent schools to use employer engagement activities to enhance prospects of university admission (Huddleston *et al.*, 2014).

Table 2: Proportions of secondary school teachers with experience of pupil participation in employer engagement activities perceiving the activity to be effective in improving student attainment (Mann *et al.*, 2016, p. 27)

Activity	Number with experience of activity	Number believing activity to be effective	Percentage believing activity to be effective
1 Work experience	353	203	58%
2 Short-form enterprise competition	313	120	38%
3 Long-form enterprise competition	231	82	35%
4 Mock interviews	288	97	34%
5 Career talks	350	117	33%
6 Workplace visits	237	76	32%
7 Mentoring	115	36	31%
8 Work-related learning qualifications	183	45	25%

Table 2 highlights a diversity of opinion among respondents. It is by no means certain (from a practitioner perspective) that employer engagement activities increase attainment. Moreover, the view is that different activities enhance attainment in (potentially) different ways. Furthermore, the findings reveal a practitioner instinct that different types of pupils can be expected to respond in different ways to different activities. This is a conclusion of the report when considering responses related to pupils by achievement level. The same study asked teaching staff which, if any, of the activities (of which they had direct experience) was particularly effective in supporting the needs of young people of differing abilities. The results, as set out in Table 3 below, suggest that young people with lower levels of achievement benefit more from sustained engagement with the working world—work experience, mentoring—and benefit from interventions that directly integrate employer engagement into teaching and learning (learning resources, classroom teaching). By contrast, higher achievers are expected to respond to less substantial interventions (careers fairs, mock interviews). It may be possible to read into these views that it is lower achievers whose confidence in education is weakest, who require the deepest exposures to the labour market to challenge embedded assumptions (Mann *et al.*, 2016, pp. 16–17).

Table 3: Proportions of secondary school teachers with experience of pupil participation in employer engagement activities perceiving the activity to be effective in supporting learners at different attainment levels (Mann *et al.*, 2016)

Low achievers	Work experience	73%	Learning resources	62%	Mentoring	57%
Borderline achievers	Work experience	76%	Mentoring	66%	Curriculum teaching	65%
High achievers	Career fairs	76%	Mock interviews	75%	Long-form enterprise	73%
Learners with Special Educational Needs	Work experience	73%	Learning resources	53%	Workplace visits	47%
Disengaged learners	Work experience	70%	Mentoring	62%	Workplace visits	59%

Overall, this review highlights issues for consideration for the typological approach to employer engagement in education. It suggests that enhanced academic achievement is a legitimate objective and outcome relevant to such school-mediated workplace exposure. While on average impacts may be modest, it is likely that they are concentrated among learners of particular characteristics, notably lower achievers. In terms of identifying specific interventions likely to enhance attainment, a limited number of opinion surveys and high quality analyses using experimental or quasi-experimental designs offer useful insight. They suggest that employer engagement activities can be of value to young people on the presumed basis that they serve to enhance young people's ability to draw connections between education and later economic outcomes.

The above discussion focuses specifically on the character of provision experienced in secondary education. A different approach is necessary when considering the operation of employer engagement in primary education, as discussed below.

Employer engagement in primary provision: supplementary and additional approaches

While historic U.K. government policy has overwhelmingly focused on secondary provision, primary schools have long connected with the local economic community to support positive outcomes for children—at times with the encouragement and support of government (see Smith, 1988; Saunders *et al.*, 1995; RSA, 1989; Wade *et al.*, 2011). Interventions can be distinguished, in much the same way as at secondary level, between those aimed at developing pupil *knowledge and skills* and those which seek to influence pupil *attitudes and aspirations*.

Pupil knowledge and skills: primary schooling

Employee volunteers have long been used by primary schools across three coherent areas of knowledge and skills development: supporting literacy, numeracy, and the development of 'enterprise' and 'employability' skills. In the first two of these areas, the role of reading and number partners can be seen

as providing *supplementary* support—effectively providing additional resource for classroom teachers aimed at achieving core learning objectives.

Reading partners and literacy

Reading partner schemes have been familiar in the U.S., mainland Europe, and the U.K. for many years. Schemes are characterised by the use of largely untrained volunteers brought into primary schools to hear children read on a regular basis (Torgerson, 2002, pp. 434–436). While, of course, programmes could be undertaken using parents or university students, employee volunteer schemes are very common and have been popular with schools for reasons of logistical simplicity as well as alignment, as will be seen, with ambitions to influence the career awareness and aspirations of children.

A review by Torgerson *et al.* (2002) looked at the results of seven U.S. and U.K. experimental studies using such reading partners, including seven randomised controlled trials. This provides one overview of types of programme historically delivered and the challenges of assessing impact. The review did not specify whether reading partners were workplace volunteers. It found results to be, when considered as a collective, inconclusive, with all studies suffering from a low number of participants. Studies showed that in some circumstances reading partner schemes were positively associated with improved learning outcomes, others suggested that this was not the case. It is possible that the studies reflected variation in programme design and pupil selection as well as low participation numbers, undermining statistical confidence.

Campbell *et al.* (2006) offer a broader review of 21 randomised controlled studies published between 1986 and 2004 exploring the impact of ‘adult volunteer tutors’ on the academic achievement of children in U.S. elementary and middle schools. Volunteering schemes of at least three months’ minimum duration included the use of parents, university students, and ‘community’ volunteers and explored a range of outcomes including reading, writing, and mathematics. The meta-review considered the experiences of 1,676 children in total who were divided between treatment and control groups. The review concluded: ‘Participation in a volunteer tutoring program results in improved overall reading measures of approximately one-third of a standard deviation’ (p. 23). There is an important overlap between the studies led by Campbell and Torgerson: four of the seven studies considered by the latter are also reviewed by the former, but differences in approach mean that both studies offer a reasonable, but constrained, insight into the impact of *employee* volunteers within reading programmes.

More recent work by Queen’s University Belfast focused more narrowly on a reading partner programme which made explicit and exclusive use of employee volunteers. The study illustrated the difficulties encountered in selecting the appropriate methodological tools to test for impact in primary schools in Northern Ireland. After an initial study by Miller and Connolly (2013) failed to detect any impact on the children involved, a second study (Miller *et al.*, 2011) used a revised methodology within a large trial of some 512 children aged eight to nine years—identified as being below average in reading ability and lacking confidence in reading—263 of which were randomly assigned to participate in weekly one-hour sessions with employee volunteers over a school year. When compared to a control group using statistical testing, the researchers found the programme to be ‘effective in improving a number of reading outcomes for pupils’ with impact strongest in relation to decoding, reading rate, and reading fluency.

Number partners and numeracy

There is also a tradition in the U.K. (and further afield) of primary schools drawing on local employee volunteers to support numeracy teaching. Like reading partners, number partners are commonly employee volunteers that regularly visit schools—in this case to play number-based games with children to support mathematics learning and financial literacy. Academic literature on the impact of such

employer engagement is much weaker than for reading partners. A 2014 Education and Employers Taskforce survey of teaching staff in 28 primary schools with experience of participating in such a programme (www.numberpartners.org) found that volunteering was most commonly undertaken to support pupils aged eight to ten, with weekly sessions of 15–30 minutes typical (Morris, 2014). Perhaps unsurprisingly, participants in the programme overwhelmingly valued it with two-thirds reporting that they felt the scheme ‘very much’ increased the pupils’ chances of reaching individual numeracy targets. Respondents highlighted increased pupil confidence as the single most powerful observable effect: that participation in such programmes, it appeared, led to feelings of heightened self-assurance—children believing that if they applied themselves they would be able to resolve maths problems—an attitude strongly related to numerical achievement (OECD, 2013).

Enterprise/employability skills

The more familiar form of skills development in U.K. primary education relates to enterprise education. This is also a common feature in other countries. For example, programmes such as the Fiver Challenge (www.fiverchallenge.org.uk) often draw on local volunteers bringing personal experiences of running an enterprise to act as competition coaches and judges. Such projects have been undertaken by primary schools engaging children of all ages, for example:

- providing pupils with a small cash investment and the challenge of doubling the money through the sale of products and services;
- whole-school projects with classes designing, producing, and selling products such as flower pots and shopping bags;
- workplace visits designed to illustrate production techniques and occupational roles;
- cross-curricular activities such as the development and promotion of a healthy eating restaurant drawing on science, numeracy, and ICT;
- writing, planning, producing, and managing a publically-performed play; or
- running a lunchtime enterprise club to support older pupils developing business ideas. (SSAT, 2010.)

Despite their popularity, robust quasi-experimental or experimental studies looking at the impact of such provision on children are sparse. One important exception is a 2012 Dutch study (Huber *et al.*, 2012) on the effect of taking part in a programme wherein 11-year-old pupils ran their own enterprise over five non-consecutive full days. Using an RCT evaluation, the study found that when compared to a control group, participants had significantly improved self-assessed non-cognitive skills, and changed attitudes, across a range of areas: self-efficacy (defined by the authors as ‘belief in own ability’), need for achievement (‘desire to do well’), risk-taking (‘predisposition towards risky activities’), analysis (‘ability to assess complex situations’), persistence (‘ability to continue despite setbacks’) and creativity (‘ability to create many activities’).⁷

⁷ A clear relationship can be seen between the development of such enterprise skills and ‘employability skills’. These are commonly described as the functional applied use of numeracy, literacy and ICT combined with effective self-management, thinking and problem-solving, working together and communicating, and understanding employers (see UKCES, 2009). Huber *et al.* (2012) found no statistically significant variation in two areas: motivation and pro-activity.

Pupil attitudes and aspirations

Whereas reading and number partner programmes can be seen as *supplementary* uses of employer engagement and enterprise competitions, *additional* uses of the resource A randomised controlled trial evaluation of a school based volunteer tutoring programme aimed at increasing reading skills amongst 8–9 year olds” and how what they do in classroom, even at the youngest ages, can relate to their adult lives. As such, employer engagement becomes a resource to influence the aspirations of young people through addressing the assumptions which shape basic attitudes and expectations so influencing thinking about education and its value.

Aspirations and outcomes

The idea of ‘aspiration’ has secured considerable interest from policy-makers and researchers over recent years (Archer, 2014; Moote and Archer, 2017). A series of recent quantitative longitudinal studies have drawn compelling relationships between school-age aspirations and both engagement in education and the achievement of adult economic outcomes. Using data from the U.K. Millennium Cohort, Flouri and Pangouria (2012) have, for example, looked at the career aspirations of children aged seven and found statistically significant associations between aspirational levels and pupil behaviour: looking at children from disadvantaged backgrounds, those with higher aspirations were less likely than comparable peers to ‘act out’ (behave poorly) in class. U.S. and Australian studies have found links, moreover, between the nature of occupational aspirations of primary pupils and later educational outcomes, with higher aspirations being positively related to higher levels of attainment and lower dropout rates (Knight, 2015, p. 76; Gutman and Akerman, 2008, pp. iv, 16).

Studies have emphasised, consequently, that the ‘early years of a child’s life are a key time in [the] formation and development’ of career aspirations (Gutman and Akerman, 2008, p. ii). The attitudes formed by children shape their later behaviour in ways of ultimate economic importance. Looking at interest in science, for example, a team led by Louise Archer (King’s College London and now UCL Institute of Education) has shown that longitudinal tracking finds that students who do not express aspirations related to careers in science, technology, engineering, or mathematics (STEM) at age ten are unlikely to develop such aspirations by the age of 14—and are consequently less likely to pursue science subjects, achievement in which is related to higher adult earnings (Archer *et al.*, 2013, p.3).

For Archer, and other researchers, such aspirations reflect the complexity of children’s emerging identities. The character of aspirations is strongly rooted in young people’s sense of what is ‘reasonable’ and ‘natural’ for ‘people like me’ to pursue. Children come into schools with assumptions which have emerged out of their own day-to-day experiences—experiences which are routinely shaped by ideas surrounding gender, ethnicity, and social class (Gottfredson, 2002; Archer, 2010; Archer *et al.*, 2012). By the age of eight, girls and boys routinely develop gendered ideas about jobs and careers—with long term implications. Such ‘naïve early understandings have already turned them’, argue Gutman and Akerman (2008) from their review of research literature on gender and aspiration, ‘towards some possible futures and away from others’ (p.5).

Employer engagement as a mechanism for challenging gender stereotyping and broadening STEM aspirations

The subject of science provides a now well-worked example of how young people’s career thinking relates to their social backgrounds and the powerful potential for schools to intervene within this process

of identity formation. Archer *et al.* (2013) have shown that those young people low in 'science capital'⁸ tend to develop narrow and highly limited understandings of the economic uses of science, and struggle to see its relevance to careers beyond the stereotypes of doctor, science teacher, and scientist. In spite of high levels of personal enjoyment, such children commonly struggle to see the long-term relevance of science to their own lives. They fail to find an extrinsic value in its pursuit, reducing levels of engagement. Research shows, through substantial survey and interview evidence, that, overwhelmingly, very many children see science careers as relevant simply to 'brainy' white men or other stereotypes (Archer *et al.*, 2012; Archer *et al.*, 2013). It is a view echoed in experiments where children have been asked to 'Draw-A-Scientist' and responded overwhelmingly by drawing a balding, bespectacled, white man wearing a lab coat and working with chemical tubes and vials (Newton and Newton, 1998; Flick, 1990).

Research also shows how the characteristics popularly associated with the 'ideal student', and particularly the 'ideal physics student', tend to be aligned with white, middle-class masculinity, against which female, working-class, or minority ethnic learners tend to be judged negatively, even if they are achieving well. Studies into the formation of careers aspirations stress, then, the long-term consequences of attitudes and assumptions which are rooted in social backgrounds. Importantly, research strongly suggests that such thinking can be influenced by the actions of schools. In an interesting U.S. study, children aged nine to ten drew very different images of scientists after exposure to real-life working scientists coming into classrooms to engage. As Flick (1990) states, following the intervention (and in comparison to peers), children 'perceived scientists more as regular people' capturing a much broader range of people and activities in their drawings (p. 240). Prior to the start of the intervention, which involved seven hours of classroom visits from five working research scientists, children had been just as stereotypical as peers in expressing their assumptions around who scientists were and what they did.

For Archer and colleagues, schools have an important capacity to address the inherent inequalities of family background that influence children's attitudes and assumptions. Archer and her team call for efforts to broaden pupil STEM aspirations to begin in primary schools with STEM careers awareness embedded in science provision drawing readily on role models from local work places to challenge the stereotypical image of science careers as being 'only for the brainy' and for a limited cross section of society (Archer *et al.*, 2013, pp. 27–28; 2014; 2012; 2010; Archer and DeWitt, 2017). As is noted:

'what is required is a new vision of science education, not only of what we know and how we know, but also what kind of careers science affords – both in science and from science – and why these careers are personally fulfilling, worthwhile, and rewarding' (Archer *et al.*, 2010, p. 636).

By enriching their real-life experiences, pupils can be encouraged to think again about the meanings and implications of what they are being taught in class. 'Children's career and educational choices', as Knight (2015) argues elsewhere in the academic literature, 'are influenced by adult role models as well as by parental expectations' (p. 77), and schools, as Gutman and Akerman (2008) state, 'can play a part in maintaining and realising ambitions, and the support they provide becomes more important when family resources are limited' (p. ii).

Through engagement with people who bring an authentic experience of the uses of subjects of study in the working world, schools can challenge the assumptions developed by children, allowing them to draw richer, more informed connections between education and ultimate economic and wider success in adult

⁸ 'Science capital refers to science-related qualifications, understanding, knowledge (about science and 'how it works'), interest and social contacts (eg, knowing someone who works in a science-related job)' (Archer *et al.*, 2013, p. 3).

life (Knight, 2015, p. 76). As Kelly (2004) has shown, even very high-performing primary school pupils often struggle to see the meaning of academic learning, such as in maths, to the real world.

The Key Stage 2 Career-related Learning Pathfinder (Wade *et al.*, 2011) represents a significant government-sponsored intervention enhancing the engagement of primary schools with employers in England. It was undertaken in the first decade of the twenty-first century across seven local authorities and was:

'focused on developing pupils' growing perception of their own place in the world of work. By enabling pupils to learn about themselves and the occupational choices they could have, through a programme of career-related learning, the intention was to help them develop a better view of their self-efficacy' (Wade et al., 2010, p. iv).

In such a way, policy architects saw the impact of greater exposure to the working world as playing out in young people's changing self-conceptions of who they were and who they might become. Explicitly, and drawing on Bandura *et al.*, (2001) and Blenkinsop *et al.*, (2006), the Pathfinder targeted children in more deprived areas on that assumption that 'career related learning may have the potential to ameliorate the likely restrictions arising out of limited cultural capital, thus widening horizons and encouraging pupils to think beyond "known" familial or experienced occupations' (Wade *et al.*, 2011, p. iv).

Comparing survey responses from some 5,000 Year 5 children in 38 intervention schools to 120 control schools over three sweeps, the study evidenced:

- broadening and raising of pupil career aspirations;
- increasing confidence from disadvantaged pupils that they would achieve a higher status or higher skilled job in the future;
- increasing understanding of the link between education, qualifications, and careers and a more positive attitude towards school and education;
- decreasing gender stereotyping about careers; and
- improved attendance and attainment. (Wade *et al.*, 2011, pp. vi–vii.)

A typological approach

This review of the limited research literature on the impact of work-related activities on primary school provision highlights patterns in the purpose to which employer engagement is designed and understanding (as limited as that is, given the literature) of its outcomes. Three areas may be identified:

- First, much of the work related to primary education is focused around *educational outcomes* for young people—whether delivered through the provision of *supplementary* resource in the classroom (reading and number partners) or as a *complementary* mechanism to change pupil attitudes about the value of education.
- Second, provision is designed to enhance children's *understanding of jobs and careers*—for example, by challenging gender stereotyping or illustrating the uses of science in employment.
- Third, in considering enterprise education, engagement can be seen to offer means to secure *additional* learning outcomes to the usual diet of provision—providing pupils with the opportunity to explore and practice knowledge and skills (such as problem-solving and team working) demanded by the modern labour market.

These three outcome areas align with activity undertaken at secondary level and evidence on anticipated impacts reviewed above in terms of educational outcomes and below in terms of economic impacts.

Employer engagement to achieve economic outcomes

While educational imperatives have driven considerable interest in employer engagement in education across England (Huddleston, 2012), interest has often been overshadowed by economic objectives. When work experience placements were first introduced in England, it was with a view to support teenage school-leavers to move more smoothly into employment (Miller *et al.*, 1991). More recently in England, following the repeal of the statutory requirement to Work-related Learning at Key Stage 4 and the abandonment of 14–19 qualification reform, government interest in workplace interaction has strongly emphasised economic outcomes. This is at the heart of employer engagement within reform of post-16 vocational provision in England and in careers and enterprise policy reform. As influential government advisor Alison Wolf argued in 2011:

'Helping young people to obtain genuine work experience – and, therefore, what the CBI calls “employability skills” – should be one of the highest priorities for 16–18 education policy in the next few years' (Wolf, 2011, p. 130).

Subsequently, episodes of employer engagement became central elements within post-16 programmes of study in England, particularly vocational courses of study which are central to the Sainsbury panel's vision for future reform:

'Work experience is [...] valuable because it can open the eyes of individuals to the realities of the workplace (such as the need to dress and act in the expected way and to arrive promptly), while beginning to equip them with important employability skills (for example to communicate information concisely, follow instructions accurately etc.). [...] work placements must be well planned and clearly structured to ensure the student has appropriate opportunities to learn pre-defined knowledge, skills and behaviours. For individuals on college-based technical education routes, work placements can offer opportunities to gain practical skills and behaviours which would be more difficult to develop in an educational setting' (IPTE, 2016, pp. 51–52).

The Sainsbury panel concluded that it would expect learners on vocational pathways to undertake extended work experience placements linked to occupational ambitions, and 'the duration of work placements to vary from [vocational] route to route' (*op. cit.*, pp. 52–53).

From a secondary school perspective, Ofsted's recent thematic review of enterprise education, work experience, employer engagement, financial capability, and apprenticeship promotion was fittingly entitled *Ready for Work* (Ofsted 2016). And from the viewpoint of careers provision in England, former Department for Education Minister, Robert Halfon, argued:

'It is clear to me that if we are truly to meet the needs that our economy has for the full range of skilled workers, we need to drive improvements in productivity, and this relies heavily on a stronger and better system of careers advice and guidance' (Halfon, 2017).

As the Minister responsible for apprenticeships and skills in England, employer engagement is an essential component within effective careers provision and this is a perspective echoed internationally (Hughes *et al.*, 2001; 2016). The OECD argued, for example, in the publication *Learning for Jobs*:

'Individual career guidance should be a part of a comprehensive career guidance framework, including a systematic career education programme to inform students about the world of work and career opportunities. This means that schools should encourage an understanding of the world of work from the earliest years, backed by visits to workplaces and workplace experience. Partnerships between schools and local firms allow both teachers and students to spend time in workplaces' (OECD, 2010, p. 85).

While policy interest in employer engagement as a mechanism for enhancing employment outcomes has grown since 2010, research literature has increasingly highlighted hard outcomes experienced by young people related to their participation in school-mediated employer engagement. For example, the 2016 EEF international literature review into the impact of careers education found strong evidence of economic premiums linked to provision, but not in all cases:

'The review identified 27 studies which explored the links between school-age careers education and later economic outcomes for those individuals. A robust literature does exist—linked mainly to wage premiums using national longitudinal databases. Two-thirds of the studies reviewed (67%) provided evidence of positive economic outcomes; one-third found evidence to be mixed with no distinct patterns in terms of outcomes. No study found evidence that participation in a careers education intervention can be linked to poorer adult economic outcomes. The scale of the wage premiums detected is routinely considerable' (Hughes *et al.*, 2016, pp. 4–5).

Looking more narrowly at those activities most likely to involve employers, similar patterns are observed.

Table 4: Economic outcome assessment by intervention (likely to involve employer engagement)
(Hughes *et al.*, (2016) 'Careers Education: International Literature Review', London: EEF)

Intervention area	Number of studies	Generally positive outcomes	Mixed results	Generally negative results
Enterprise activities	4	3 (75%)	1 (25%)	–
Job shadowing	5	4 (80%)	1 (20%)	–
Mentoring	6	4 (67%)	2 (33%)	–
Work experience	8	6 (75%)	2 (25%)	–
Work-related learning	11	6 (55%)	5 (46%)	–
Total	34	23 (68%)	11 (32%)	–

Making sense of economic outcomes

In order to try and make sense of economic outcomes, it is important, first, to acknowledge that the evidence suggests that often impacts are considerable. Wage premiums of between 10% and 20% above

control group earnings have been identified by the studies reviewed by Hughes *et al.* (2016).⁹ Recent analysis by Mann and Huddleston (2017) offers a context for understanding how employer engagement might be experienced within the educational life courses of young people. They draw on focus groups with recruiters from U.K. employers of varying sizes and sectors, as well as interviews with policy commentators. The latter included Andreas Schleicher, Head of Education and Skills at the OECD, Chris Husbands, then Director of the Institute of Education, London, Ewart Keep, Chair of Education, Training and Skills at the University of Oxford, and editors of two important British-based research journals dealing with questions of education and employment—Lorna Unwin (Institute of Education, London) recently retired editor of the *Journal of Vocational Education and Training*, and Hugh Lauder (University of Bath), long-standing editor of the *Journal of Education and Work*. From this, Mann and Huddleston (*op. cit.*) highlight the growing difficulties experienced by young people as they seek employment, connecting these with structural changes in the operation of the labour market—globalization, automation, deregulation, and so on. In their analysis, they highlight three primary reasons for the worsening experiences of young people, each of which have the potential to be addressed by schools and colleges—each relating to elements of employer engagement. Summarised below, the analysis suggests that enhanced employer engagement related to careers provision, recruitment skills, and applied learning can be expected to enhance outcomes for young people.

⁹ In one U.S. study, this scale of wage premium is compared to the boost provided by an additional year of tertiary education in the youth labour market (Kemple and Wilner, 2008).

Figure 1: Implications of labour market change for young people and schools or colleges (Mann and Huddlestone, 2017)

Due to globalization, liberal labour regulation, and especially technological change, for young people, the labour market is increasingly...		
... complex , with shifts in distribution of employment, jobs growth in new economic areas, and significant change in working practices in traditional areas.	For young people , investment choices (what and where to study, the value of qualifications and experience) become more difficult as the labour market becomes more complex.	For schools/colleges (primary and especially secondary), careers education information, advice, and guidance, enriched by extensive employer engagement, becomes more important.
... competitive , with churns between employment (PT, FT, temporary), education, training, unemployment, and NEET* commonplace.	For young people , understanding of how the labour market works, job seeking skills (application processes and in interviewing) and personal resilience become more important.	For schools/colleges , activities to develop resilience and authentic recruitment preparation in context of labour market operation become more important. Where possible, schools can help put pathways from education into work in place.
... changing , with personal effectiveness and adaptability at a premium in service/knowledge economy.	For young people , ability to apply their knowledge in unfamiliar situations becomes more important.	For schools/colleges , applied learning (enterprise education), specifically when delivered in real-world settings, becomes more important.

* 'Not in education, employment, or training'.

In trying to make sense of the impacts observed, the authors of the 'Careers Education: International Literature Review' note:

'In seeking to make sense of the positive economic outcomes detected, the literature often references social capital theory, noting that the lack of both personal and professional network connections, and of exposure to the world of work, is thought to hinder the labour market progress of young people from low-income backgrounds in particular. Young people are commonly understood to make use of their episodes of careers education, and especially first-hand experiences of the labour market, to gain improved insights into the operation of the labour market, its breadth and demands. In turn, it is argued, new insights enable more informed decision-making, smoothing the transition into sustained employment' (Hughes et al., 2016, p. 5).

Capitals theory and making sense of economic outcomes

Stanley and Mann (2014) argue that capitals theory offers a useful means of making sense of employer engagement in education. Drawing on theorists—notably Becker, Granovetter, and Bourdieu—they attempt to demonstrate the ways in which employer engagement might serve to enhance the accumulation of capitals as resources which can ultimately be transformed into some form of economic advantage.¹⁰ The advantage of such an approach is two-fold. First, it focuses the attention of scholars on phenomena which are conceptually and empirically linked to enhanced economic outcomes. Second, it enables researchers to transcend the narrow field of literature relating explicitly to employer engagement in education and draw on wider research which helps to illustrate how teenage attitudes and experiences related to the world of work can influence later economic outcomes.

By way of example, Hughes *et al.* (2016) offer a small study of literature surrounding the impacts of part-time teenage working on educational and adult economic outcomes. While a majority of (typically longitudinal) studies found negative outcomes with regard to educational outcomes, overwhelmingly they discovered positive evidence of economic outcomes (p. 4). Given that part-time working can be expected to be concentrated in economic fields (for example hospitality and retail sectors) which can be expected to align poorly with the career ambitions of teenagers (Fullarton, 1999; Mann *et al.*, 2013; Conlon *et al.*, 2015), it can be hypothesized that the primary development young people might expect from their teenage working would relate to human capital (Mortimer, 2010). Opportunities to understand careers related to ambitions or to develop social connections linked to aspirations are limited in comparison to the opportunity to gain workplace experience. However, studies of employer engagement in education have found it harder to evidence enhancement of human capital than social or cultural capital.

Jones *et al.* (2015) have built on the conceptual framework presented by Stanley and Mann to test for the comparative impact of the three different capitals. Undertaking textual analysis of written statements offered by young British adults on what, if anything, they got out of their teenage school-mediated interactions with employers, the analysis categorized statements by capital and found that young adults rarely argue that they gained human capital through their experiences. Rather, it is in the field of social and particularly cultural capital accumulations where impacts are felt to most readily accrue.

*‘Cultural Capital is the clearest benefit associated with engagement as young people from all backgrounds grow in personal confidence and begin to develop insights that prove valuable when navigating the job market. This links to Social Capital, the second most common type, which often involves establishing a range of ‘weak ties’ providing resources of differing types rather than a single connection that leads to permanent employment. Human Capital in the traditional sense of skills development was found to be relatively low frequency, thereby challenging the assumption that teenage exposure to working professionals necessarily generates “employability skills”. Young people more commonly use employer engagement to aid self-realisation than to develop workplace skills directly. In other words, they become better equipped to make connections between their academic input and their future roles in the workplace’ (Jones *et al.*, 2015).*

Such an emphasis resonates with a number of other detailed studies. Raffo and Reeves, for example, over a series of ethnographic studies, explore the means by which young people encounter episodes of employer engagement. They describe the ways in which young people make sense of insights into the labour market which are perceived to be unusually authentic and incontestable and relate such new

¹⁰ For a discussion of human, social, and cultural capital in the context of employer engagement in education, see Stanley and Mann (2014).

information to a highly personalised sense of prior identity—who they are and who they might become. Drawing on a close study of Manchester pupils aged 14–16 in extended school-mediated work experience placements, Raffo and Reeves (2000) argue:

‘What we have evidenced is that, based on the process of developing social capital through trustworthy reciprocal social relations within individualized networks, young people are provided with an opportunity to gain information, observe, ape and then confirm decisions and actions with significant others and peers. Thus, everyday implicit, informal and individual practical knowledge and understanding is created through interaction, dialogue, action and reflection on action within individualized and situated social contexts.

[...]

[T]here is also evidence in our research of individual young people having their social relations enriched by outside, yet authentic and culturally appropriate, significant others. In these situations, individual strategic decisions about life choices are being affected by external agencies and actors – external in that they are potentially beyond the structuring influence of locality and class. This results in these individualized systems of social capital for individuals becoming more open and fluid, with outside, symbolically rich, resources impacting more freely on their lives’. (Raffo and Reeves, 2000, pp. 151–153.)

It is an analysis which resonates with the conclusions from Hughes *et al.*’s 2016 report ‘Careers Education: International Literature Review’ and Mann and Percy’s 2014 account of wage premiums linked to teenage experiences of school-mediated employer engagement. The latter study argues that episodes of employer engagement commonplace within British education provide limited opportunity to develop human capital, whether in the form of technical or employability skills. With interventions routinely episodic, short duration, and lacking in learning objectives, it is social capital theory linked to senses of identity formation which offers the most helpful theoretical lens through which to understand economic boosts.¹¹

‘[W]hile young people are unlikely to gain significant additional technical or employability skills through school-mediated employer engagement, there is evidence to suggest that such activities provide meaningful opportunity for pupils to gain insights of value into careers of interest. Through school-mediated activities, young people have the chance to come into contact with professionals working in vocational areas of interest and so potentially access useful information about whether and how they might pursue a career in that sector. In this way, it becomes easier to understand how long-term benefits might flow from short duration interventions such as attendance at careers’ fairs or workplace visits’ (Mann and Percy, 2014, pp. 15–16).

Such capitals analysis offers, therefore, highly practical insights of relevance to practitioners seeking to optimize the value of employer engagement activities. Studies highlight the importance of social capital as the pathway through which positive impacts are most commonly felt, highlighting the importance of:

¹¹ Researchers would be well placed to explore the theoretical links between conceptions of social and cultural capital and identity capital. The work, for example, of James Côté (2002, 2014) has used life course analyses to explore the ways in which the character of individual progression through education into employment can be linked to such intangible psychological dimensions as internal locus of control, self-esteem, sense of purpose in life, and critical thinking ability.

- *authenticity* in the character of the interaction (Linnehan, 2004; Mann and Percy, 2014; Raffo and Reeves, 2000);
- *volume* in terms of optimizing the chances of young people being exposed to what Granovetter describes as ‘non-redundant trusted information’ (Percy and Mann, 2014; Stanley and Mann, 2014; Mann *et al.*, 2017); and
- pupil perceptions of *quality*, or perhaps better, *relevance* in signalling that something new and useful has been learnt from the interaction (Kashefpakdel and Percy, 2016; Mann *et al.*, 2017).

Perhaps most helpful within these conceptual approaches is that they aid understanding of how participation in school-mediated employer engagement might be shaped by preceding levels of capital development and how experiences can influence future accumulations of the resource. In human capital terms, for example, higher attainers are perceived by teaching staff to respond in different ways to workplace experiences than lower attainers (QCA, 2004). In social capital terms, a wide body of literature has demonstrated that the character of family based networks routinely influences access to work experience placements (Le Gallais and Hatcher, 2014; Norris and Francis, 2014; Huddleston *et al.*, 2014). A further body of work has explored the ways in which teenage attitudes about careers, and what is acceptable and accessible in terms of work placements, is highly shaped by cultural attitudes surrounding gender (Francis *et al.*, 2005; Osgood *et al.*, 2006).

The conceptual approach helps make sense of school-mediated employer engagement as it allows it to be considered as a resource which relates to existing knowledge, skills, and attitudes possessed by a young person. If an intervention gives young people something of which they already have extensive understanding or experience, impacts might be expected to be lower than in the case where information and experiences are new and different. Equally, how well equipped a young person is to take meaning from an intervention will influence the extent to which they fully engage in the opportunities provided.

The approach allows a deeper insight into the character of effective practice. It stresses, for example, the importance of authenticity and volume in young people’s encounters with employers, and the significance of variation in exposing students to different types of activity. Moreover, that best practice should involve personalisation of employer engagement approaches delivered within the context of professional careers provision. Finally, the analysis directs that young people should engage with employers from an early age, drawing links between education and employment from primary school onward, and that they should be encouraged to review the quality of their experiences—did they learn anything new and useful?

Challenges in creating a typology of employer engagement in education

In reviewing literature on the purposes and impacts of employer engagement in education in order to make sense the different types of intervention available to schools and colleges, three challenges emerge relating to the presentation of a typology which is practical, comprehensive and evidence-based.

1. While some activities seem consistently more effective as a means of achieving different outcomes, individual employer engagement activities do often appear to serve multiple purposes.

First, the evidence suggests that individual activities can often serve more than one purpose. For example, Mann and Kashefpakdel (2014) cite data from a 2011 survey exploring the views of 1,000 young adults aged 19–24 on the usefulness of employer engagement activities (some delivered in different ways) of various types in helping to decide on a career, get into university, or get a job after completing education. Table 5 indicates what percentage of young adults with experience of an activity felt that it helped them, in some measure (or in brackets, ‘a lot’), to achieve the stated outcome.

Table 5: Comparative perceptions of utility of four different employer engagement activities—attitudes of 1,000 young British adults, 2011 (Mann and Kashefpakdel, 2014)

Activity	Percentage agreeing activity was helpful at all (or solely ‘a lot in’ parenthesis)...		
	...getting a job after education (%)	...deciding on a career (%)	...getting into higher education (%)
Work experience	27 (9)	58 (20)	27 (7)
Career talks (1-2 times)	33 (4)	55 (8)	32 (6)
Career talks (3+)	54 (16)	84 (28)	52 (20)
Mentoring (all types)	60 (23)	78 (28)	62 (18)
Enterprise competition (short-form)	25 (5)	35 (8)	28 (4)
Enterprise competition (long-form)	34 (7)	50 (3)	50 (8)

The table summarises the perceptions of an important cohort of commentators—young adults in the early labour market with first-hand experience of relevant activities. Patterns are evident: three or more careers talks, as well as mentoring activities, are particularly valued. However, a significant minority felt that all the activities had, to some extent, proved useful. As suggested by the conclusions of ‘Careers Education:

International Literature Review' (Hughes *et al.*, 2016), the table offers a challenge to policy-makers in that it reveals no simple relationship between activity and outcome.

From a different perspective, evidence from teaching staff shows a comparable level of disagreement on the value of different employer engagement activities. Mann *et al.* (2016) survey 390 secondary school teachers' perspectives on the efficacy of 16 work-related activities against a range of outcome areas related to teenage progression, attainment, and employability skill development and with regard to outcomes for learners at different levels of academic achievement. They find that one activity—work experience—is cited by respondents as the most effective work-related activity that schools can do across nine different categories related to desired outcomes and pupil types:

- improving understanding of the world of work;
- improving attainment;
- helping to broaden and raise aspirations;
- giving a realistic sense of career choices and what needs to be done to secure job objectives;
- giving an advantage in getting attractive part-time work while still in education;
- benefiting low achievers;
- benefiting borderline achievers;
- benefiting learners with Special Educational Needs; and
- benefiting disengaged or unmotivated learners.

However, work experience is not seen as particularly effective in:

- improving problem solving skills;
- improving team working and communication skills; or
- improving outcomes for high achievers.

Looking at the strongest pattern of responses, Mann *et al.* (2016) cluster employer engagement activities in terms of teachers' perspectives of their comparative value, identifying three coherent themes:

- activities related to sustained engagement with the working world (including work experience and mentoring);
- activities related to career exploration and recruitment skills; and
- activities related to enterprise competitions.

The teachers' perspective encourages practitioners (and policy-makers) to think of employer engagement activities strategically as tools to secure desired outcomes, but also cautions against overly simplistic assumptions about the uses of activities which can, in fact, serve multiple objectives.

2. Different young people can be expected to respond to different activities in different ways

The conceptual framework developed by Stanley and Mann (2014) suggests that episodes of employer engagement can be experienced by young people in different ways—a view shared by Mann *et al.* (2016) who conclude that while certain activities are particularly highly regarded by teaching staff (work experience, careers fairs, long-form enterprise competitions), there is a long tail of opinion identifying activities which are perceived to be of value in achieving different outcomes for young people of differing characteristics. More than this, much employer engagement is perceived by its recipients (young adults aged 19–24) to have been of little value in securing hard outcomes (getting a job, deciding on a career, getting into higher education). This does not mean that episodes of employer engagement cannot

contribute to softer outcomes (improved confidence, 'employability' skills) but it does suggest that it cannot be taken for granted that impacts will consistently prove to be positive and meaningful.

Employer engagement activities, therefore, need to be considered strategically by practitioners and policy-makers, adapting approaches to fit the differing needs of different young people. In keeping with the conceptualisations of Stanley and Mann (2014) and the worked examples of Le Gallais and Hatcher (2014), Jones *et al.* (2016), and Raffo and Reeves (2000), young people possessing different levels of human, social, and cultural capital can be expected to respond to exposure to the labour market in different and individualised ways. Logic, and some evidence, suggests that certain activities can be also timed in ways to enhance outcomes: the strongest adult wage premiums identified by Kashefpakdel and Percy (2016) accrued to teenagers undertaking career talks when 14–15 years old, rather than at 15–16. Mann and Kashefpakdel (2014) show that adults who recalled undertaking work experience at 16–19 are much more likely to agree that the placement was helpful to them in deciding on a career, getting into university, or getting a job after education than those who undertook placements aged 14–16.

Moreover, school-mediated employer engagement has been seen to possess greater importance in enabling progression towards certain careers than others. A 2011 review of the admissions requirements for six undergraduate degrees at twenty U.K. higher education institutions showed that the majority of courses in medicine, dentistry, and veterinary science demand relevant work experience while that was only the case for a minority of courses in engineering, business or management, and law (Mann *et al.*, 2011). The Office for Standards in Education, Children's Services and Skills in England and Wales (Ofsted) reports, moreover, a close relationship between participation in school-managed work experience placements and successful transition onto competitive apprenticeships. For example, they highlighted that half of the apprentices starting with the hairdressing company Vidal Sassoon had joined following a stint of work experience (Ofsted, 2012, p. 9). In the absence of reliable data, it is not unreasonable, furthermore, to speculate that engagement activities which are well delivered and well matched to pupil interests will be more impactful for young people (Huddleston, 2012; Mann, 2012).

3. Institutional context matters

What this suggests is that institutional context is likely to matter in terms of outcomes. The qualitative descriptions of engagement with employers experienced in U.K. further education colleges (Norris and Francis, 2014) and fee-paying Independent Schools (Huddleston *et al.*, 2014) is illustrative. In the former context, young people struggled to access the opportunities they felt would be helpful to them and hesitated to make use of the limited opportunities available, whereas in the latter, young people benefited from extensive school-driven networks (parents, alumni, governors) working in professions of direct interest to pupils. As set out in Mann *et al.* (2017), variation in the type of educational institution attended is a key factor in understanding young people's perceptions of the quality of support they receive for the adult working world in general terms and in specific regard to employer engagement. In ongoing research, Percy and Kashefpakdel draw on data from the British Cohort Study to assess whether the general context of careers provision is making a difference to the levels of adult wage premiums which have been associated with participation in school-mediated careers talks with people from outside of school (Kashefpakdel and Percy 2015). Where teenagers also reported interviews with career advisers, wage premiums enjoyed at age 26 linked to volume of career talks were higher (Percy and Kashefpakdel 2016).

An outcome-based typology of employer engagement in education

Although rarely used outside of university settings, the conceptualisations offered by capitals theory help to make sense of employer engagement in education. Such engagement helps young people to transition from education into work in four ways; we consider here a typology focused on these four key outcomes. The approach is designed to be *practical* in that it offers school staff a clear sense of the purposes behind the different uses of employer engagement, enabling staff to identify rationales for selecting different activities to meet objectives; *comprehensive*, in that the typology is of relevance to professionals working in primary, secondary and tertiary education with pupils of all types; and *evidenced* in that each outcome area sits comfortably within the current body of conceptual and evaluative research literature. At its most essential, it offers practitioners objectives to steer the selection and delivery of activities related to four realisable outcomes for young people:

1. Employer engagement in education to enhance young people's understanding of jobs and careers

Broadening and raising career aspirations and understanding of personal routes into different occupations (and the realism of such career ambitions), enabling young people to better navigate progression through education, informing decision-making on what to study, where to study, and how hard to study—improving understanding of the purposes of education and qualifications.

2. Employer engagement in education to provide young people with knowledge and skills demanded by the contemporary labour market

Enabling young people to build complementary skills such as creative problem-solving and team-working through applied learning, simulated experiences, and opportunities to understand the operation of contemporary workplaces.

3. Employer engagement in education to provide young people with knowledge and skills demanded for successful school-to-work transitions

Preparing young people to optimize their chance of success in the competition for employment in the early labour market by providing them with authentic, relevant experiences and practical insights into how recruitment processes work and how contemporary workplaces operate.

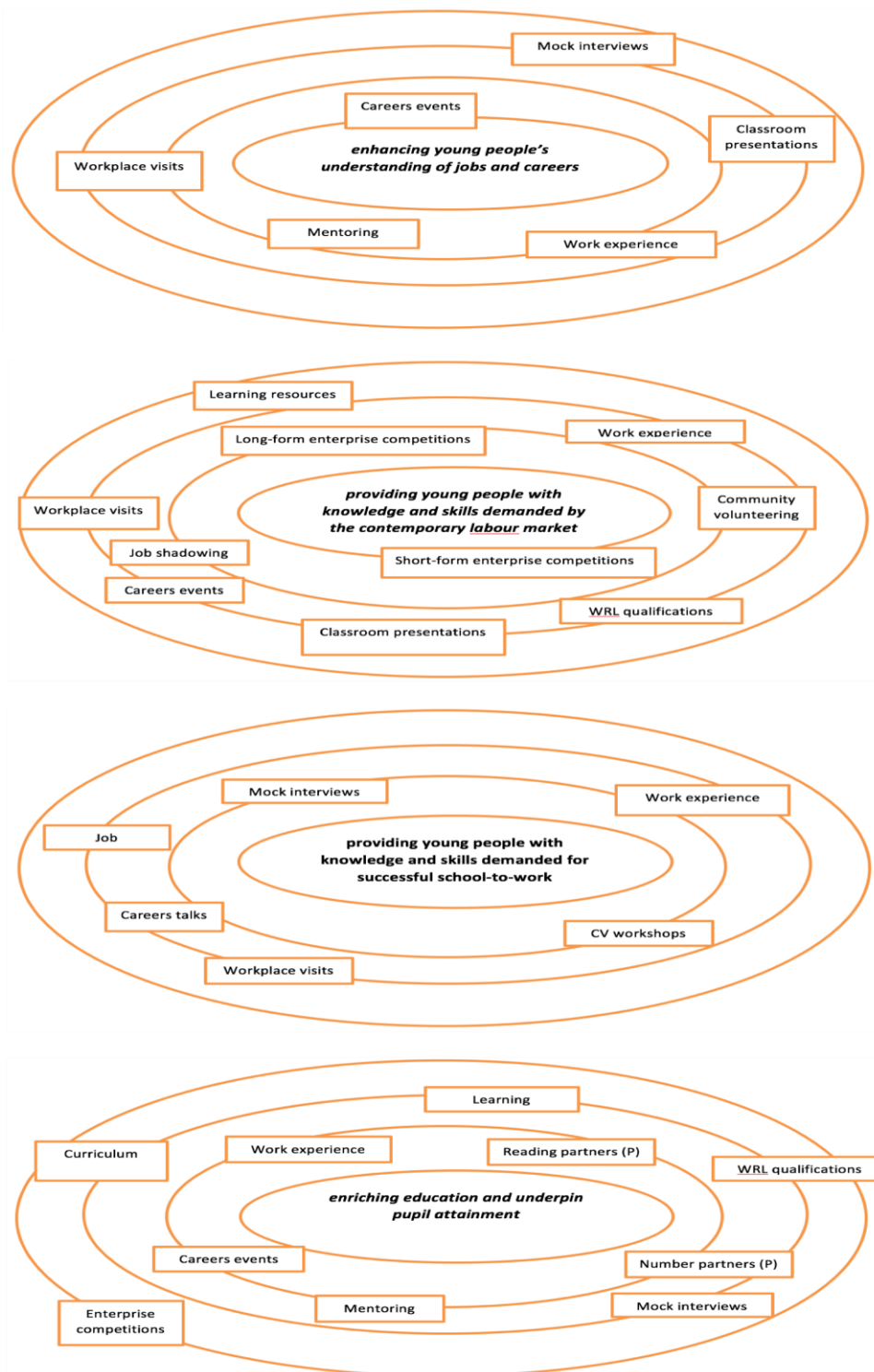
4. Employer engagement in education to enrich education and underpin pupil attainment

Harnessing the capacity of employer engagement to supplement teaching resource within the classroom and drawing on employer input to contextualize learning, but most importantly presenting young people with authentic testimony on the connection between educational inputs and employment outcomes.

In the diagrams below (Figure 2), the activities most closely related to the four different outcome areas are given. Activities located closest to the centre of each diagram are those which practitioner survey evidence and literature reviewed suggests can be most closely associated with effective progression towards meeting the outcome. Consequently, effective practice can be expected to include activities closest to the centre, but with activities delivered with the purpose of contributing towards the

achievement of the outcome. Effective practice will locate activity provision within a whole-school approach to employer engagement and personalize engagement in light of the individual circumstances of students. Overlaps will exist between the activities, for example, work-related learning qualifications can be expected commonly to include workplace visits and periods of work experience.

Figure 2: The activities most closely related to the four outcome areas



Part 2: Employer engagement in education— international literature review

Search strategy

This literature review mirrors the methodology utilised in the EEF publication, 'Careers education: International Literature Review' (Hughes, *et al.*, 2016). The analysis undertaken in that review covered a wide range of careers-related provision including many approaches which explicitly or implicitly included episodes of employer engagement (work experience, mentoring, job shadowing, careers advice, work-related learning, and enterprise activities). The current review draws on relevant literature identified within the 2016 study and mimics its search strategy to identify more recently published pieces of literature.

The search process included:

- setting review parameters—refining the review question, defining keywords, and developing the search strategy;
- searching—the systematic identification of potentially relevant evidence using a keyword strategy;
- screening—the application of pre-determined criteria to report titles, abstracts, and full texts derived from the review question and related sub-questions;
- data-extraction—an in-depth examination, quality assessment, and extraction of evidence; and
- synthesis and reporting—the analysis and identification of key findings.

In order to optimise chances of identifying relevant and reliable research within a literature characterised by the use of varying terminology and diffused across a very wide range of disciplines and academic and public reports, the research team used wide-ranging evidence databases via the University of Warwick Library (such as EBSCO and Scopus which allow sophisticated searching across a wide range of thematic databases) plus the extensive hard copy library maintained by Education and Employers. The search criteria utilised in the current review echoes that adopted in the 2016 literature review with one important exception: it also looked for papers relevant to employer engagement activities predominantly taking place in primary schools lacking a strong careers dimension—reading partners and number partners.

Search terms

Table 6 shows the keyword search terms that were used. Each row represents an 'OR' function where, for example, the terms 'young people' OR 'adolescent' OR 'pupil' OR 'education' OR 'school' were used in conjunction with the other terms. The 'NOT' facility was also used in searching databases to exclude the terms 'opinion studies' OR 'no counterfactuals' OR 'weak counterfactuals'.

Table 6: Keyword search terms and logic

The sample		Input		Outcome		Methodology
Children	AND	Career	AND	Attainment	AND	Randomised trials
OR		OR		OR		OR
Young people		Employer		Achievement		Longitudinal
OR		OR		OR		OR
Adolescent		Enterprise		Qualification		Cohort
OR		OR		OR		OR
Pupil		Entrepreneur		Employment		Counterfactual
OR		OR		OR		OR
Education		Experiential learning		Occupation		Control group
OR		OR		OR		
School		Job shadowing		Wage		
		OR		OR		
		Mentoring		Earning		
		OR		OR		
		Volunteering		Labour		
		OR		OR		
		Work based learning		Transition		
		OR		OR		
		Work related learning		Progression		
		OR		OR		
		Work experience		Social mobility		
		OR		OR		
		Workplace		School-to-work		
		OR		OR		
		Work placement		School-to-career		
		OR				
		Vocational				
		OR				
		Reading partners				
		OR				
		Number partners				

Inclusion and exclusion criteria

Once the initial search strategy had been defined, abstracts (or in some cases papers themselves) were identified for studies to be included in the keyword map, according to the following criteria:

- research that has been published in the English language since 1996;
- relating to the OECD countries;
- adhering to an experimental or quasi-experimental design;
- examining some aspect(s) of employer engagement directly linked to school and college provision (that is, all types of schools and colleges ranging from primary education to upper secondary education or equivalent); and
- focusing on children and young people in schooling of all types and ages.

Studies were excluded if they:

- focused on higher education, training, apprenticeships, or the U.K. Department for Work and Pensions 'Work Programme';
- focused on opinion studies with no (or weak) counterfactuals;
- did not adhere to either an experimental or quasi-experimental design;
- did not include a control or comparison group;
- did not include outcome measures linked directly to employer engagement interventions in schools or colleges;
- were doctoral or post-graduate student studies; or
- related to part-time working or term time employment.

Studies were included from the year 1996 because it was felt that 20 years of material would uncover the main research themes in terms of which interventions have been developed and implemented across the member states of the Organisation for Economic Co-operation and Development (OECD).

The literature review identified 44 studies focused on employer engagement in education. All studies adhered to quasi-experimental or experimental approaches. The findings focus on evidence from studies where outcomes could be compared with a control group, though the robustness of the methodologies used inevitably varies. On occasion, the literature lacked explicitness on the character of employer engagement under discussion; where this was the case, an assessment was made by the research team. For example, some studies which analysed mentoring programmes did not explicitly refer to employee volunteers, but if clearly discussing mentors other than educational professionals, youth peers, or trained social workers, the study was assumed to offer insights of value for provision on the basis that it would, most likely, include volunteers who are in employment.

Similarly, a number of studies which evaluated U.S. Career Technical Education (CTE) programmes were unclear on the extent to which employers were involved in the curriculum or programme. The National Association of State Directors of Career Technical Education note that while being an intended part of CTE courses, an ongoing challenge has been ensuring that *all* programmes have an employer partnership at their core (NASDCTE, 2014). In this case, it cannot be taken for granted that programmes include episodes of employer engagement unless explicitly stated.

In the analysis which follows, literature is assessed against a range of criteria: national relevance, pupil/student type considered by age and SEN status, consideration of social contexts (gender, ethnicity,

class), individual employer engagement activity, and, importantly, relevance to the four outcome areas identified in the typological discussion given in Part 1 of this report.

While the majority of studies in this review could be categorised into one or a number of the typological outcome areas, there was a degree of ambiguity as to where a small number of studies which found general economic outcomes should be placed. For example, Mann *et al.* found that students who participated in a greater number of employer engagement activities while at school (in general terms) could expect wage premiums and a reduced likelihood of becoming NEET compared to those who did none (Mann *et al.*, 2017). In studies such as these where the economic impact of employer engagement in general terms is assessed, where it is unclear, as it often is, whether career understanding, skills for recruitment, or skills in work are driving economic outcomes, studies are categorised against all outcome areas where an impact can be reasonably expected.

The review identified 42 individual studies that used robust research methodologies to test the impact of employer engagement in education. The studies were evenly split in terms of methodological approaches, with half adopting randomised controlled trial methodologies and half making use of longitudinal data to create a quasi-experimental approach.

Table 7: Studies by methodology

Methodology	Number of studies	% of total
Control by calculation (level 3)	21	50%
Control group (level 4)	21	50%

The 42 studies were relevant to six different countries with UK-wide analyses distinguished from those relevant just to England. More than half of the studies applied to the United States and more than 80% to either the UK including England (which was the focus of just three studies) or the US. The limited literature is highly concentrated geographically.

Table 8: Studies by country of study

Country	Number of studies	% of total
Australia	1	2%
Canada	3	7%
Finland	1	2%
Netherlands	1	2%
U.K. including England (3)	12	28%
USA	24	57%

Overwhelmingly, studies were found to focus on secondary education with just four of the 42 studies having any relevance to primary education, a significant weakness in the literature. In the tables which follow, the total number is given first, followed by the figure for the U.K. alone in brackets.

Table 9: Studies by school type

School type	Number of studies	% of total	Broad outcome area				
			Career understanding	Enrich learning	Skills for recruitment	Skills for work	Combination of outcomes
Numbers in brackets refer to the number (or percentage) in the U.K.							
Primary school (aged 5–11)	2 (1)	5% (2%)	0 (0)	1 (1)	0 (0)	0 (0)	1 (0)
Secondary school (12–19)	38 (10)	90% (24%)	2 (1)	12 (2)	0 (0)	1 (1)	23 (6)
Primary/secondary	2 (1)	5% (2%)	0 (0)	1 (0)	0 (0)	1 (1)	0 (0)
Totals	42 (12)	100% (29%)	2 (1)	14 (3)	0 (0)	2 (2)	24 (6)

The 42 studies collectively addressed provision relating to 94 different activities of which 19 took place in the U.K. A review of the studies in terms of educational or economic benefits to young people shows that none suggested that taking part in such activities was such a waste of time—that the young people involved would have been better advised remaining in lessons. However, positive impacts for students could not be taken for granted. In more than half of the studies, outcomes could be expected to be mixed in that impacts varied in their magnitude and the extent to which positive impacts could be expected to be felt by *all* young people. The great majority of studies relate to six areas: careers events with employers, work-related learning, mentoring, work experience, enterprise activities, and job shadowing. Fewer than two high-quality studies were identified anywhere across the OECD nations that were focused on reading partners, workplace visits, recruitment skills, or recruitment assistance.¹²

Table 10: Activities by positive, negative, and mixed outcomes

Outcome	Total	Largely positive outcome	Mixed outcome	Largely negative outcome
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¹² Arum and Way (2004) consider the impact of a U.S. school-assisted job placement programme to enhance outcomes for young people. In reviewing the literature, this was the only study which identified an activity which had not previously been considered.

		Numbers in brackets refer to the U.K.		
Careers events	21 (22%)	11 (5)	3 (2)	0 (0)
Work-related learning	17 (18%)	3 (0)	12 (2)	0 (0)
Mentoring	15 (16%)	7 (2)	6 (0)	0 (0)
Work experience	14 (15%)	5 (2)	6 (1)	0 (0)
Enterprise activities	12 (13%)	6 (2)	4 (0)	0 (0)
Job shadowing	9 (10%)	2 (1)	6 (0)	0 (0)
Reading partners	2 (2%)	0 (0)	1 (1)	0 (0)
Recruitment skills (interviews/CVs)	2 (2%)	0 (0)	1 (1)	0 (0)
Recruitment assistance	1 (1%)	1 (1)	0 (0)	0 (0)
Workplace visits	1 (1%)	0 (0)	1 (0)	0 (0)
Totals: All (UK)	94 (19)	47 (12)	47 (7)	0 (0)

Note: A number of studies analysed more than one employer engagement activity.

Looked at from the perspective of the typology discussed in Part 1, a total of 47 assessments can be identified across the 42 studies. Within the 47 assessments, 14 test for evidence of economic premiums of which nine reveal largely positive outcomes; 17 look for evidence of improved educational attainment of which six identify largely positive outcomes; and a further 16 present evidence of educational outcomes (such as increased non-cognitive skills) which are unrelated to success in public examinations. Of the 16 assessments, seven provided evidence of largely positive outcomes. Again, no evidence of largely negative outcomes was identified. The remainder of studies, and the majority of all studies, identified mixed results with uneven patterns of outcomes. From a narrower geographic perspective, a majority of U.K. studies can be associated with largely positive outcomes for young people, possibly suggesting a relationship between national delivery contexts and outcomes.

Table 11: Studies testing for outcomes related to educational engagement, educational attainment, and economic premiums

Outcome All (UK)	Number	Positive outcome	Mixed outcome	Negative outcome
Economic premiums All (UK)	14 (3)	9 (3)	5 (0)	0 (0)
Educational engagement All (UK)	16 (3)	7 (3)	9 (0)	0 (0)
Educational attainment All (UK)	17 (6)	6 (3)	11 (4)	0 (0)

In Table 12, the literature is disaggregated by consideration of questions related to gender, social class, ethnicity, and disability.¹³ Half of the 42 studies reviewed considered employer engagement without regard to the four significant social drivers of economic outcomes. In reviewing qualitative studies, within Part 1 of this study, key questions relating to equity in participation and outcome were raised. The literature can be seen, therefore, as limited by social contextualisation and relevance as well as by geography and activity.

Table 12: Studies reviewed with specialist focus and broad outcome area

Specialist focus	All studies	Broad outcome area				
		Enrich Learning	Career understanding	Skills for recruitment	Skills for work	Combination of outcomes
Numbers in brackets refer to the U.K.						
Gender	3 (2)	2 (1)	0 (0)	0 (0)	0 (0)	1 (1)
Class	3 (2)	1 (0)	0 (0)	0 (0)	2 (1)	0 (1)
Ethnicity	2 (0)	2 (0)	0 (0)	0 (0)	0 (0)	0 (0)
SEN/Disability	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)
Combination of specialist focus areas	12 (3)	2 (1)	0 (0)	0 (0)	0 (0)	10 (2)
No specialist	21 (4)	6 (1)	2 (1)	0 (0)	0 (0)	13 (2)

¹³ Studies included in this review employ a number of methods to measure social class and disadvantage. Athayde (2012) uses the school that a pupil attended as a measure of socio-economic background, comparing pupils at selective schools and those at non-selective schools; Golden (2005) and Linnehan (2001) assess disadvantage by asking whether students receive government supported free school meals; and Legum and Hoare (2004) compare the level of academic achievement of parents to quantify the social class of respondents.

focus area						
Total	42 (12)	14 (4)	2 (1)	0 (0)	2 (1)	24 (6)

The limitations of the evidence is thrown into sharp relief when considering the extent to which studies provide assessments of the impact of employer engagement activities against the broad outcome areas discussed in Part 1. Outside of studies exploring the enrichment of learning, few studies apply social science methodologies to make specific sense of the impacts of employer engagement activities relevant to the broad outcome areas described in Part 1.

Table 13: Overview of broad outcome areas

Outcome area	All (UK)	Level of evidence 3 All (UK)	Level of evidence 4 All (UK)
Career understanding	2 (1)	1 (1)	1 (0)
Enrich learning	14 (4)	5 (3)	9 (1)
Skills for recruitment	0 (0)	0 (0)	0 (0)
Skills for work	2 (1)	0 (0)	2 (1)
Combination of outcomes	24 (6)	16 (5)	8 (2)

Summaries of studies identified within the literature review

Applied Research Unit (2001) 'Post-secondary employment and college enrolment among Montgomery County Public School Graduates: the role of career-focused programs', Rockville, Maryland: Montgomery County Public Schools.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work-related learning work experience 	<ul style="list-style-type: none"> career understanding skills for recruitment skills for work

This study focuses on the impact of a U.S. Career and Technology Education programme which involves a prescribed sequence of courses leading to state-certified diplomas in CTE. Courses are designed to help students acquire specialized knowledge, skills, attitudes, and work habits required for post-secondary vocational education, training, and employment. Throughout high school, CTE participants may take several semester-long job placements that combine classroom instruction and work experiences. With the help of school staff, students identify and select work experiences relevant to their school and career plans. Students work at local businesses, government agencies, industries, or service industries. Employers of students and school staff work collaboratively and serve as role models in developing appropriate and relevant job competencies for students. Results show that high school students who participated in the programme performed as well, if not better, in the workplace and in college than did other graduates. CTE graduates worked more and more continuously across the 6-year follow-up period than non-CTE graduates. CTE graduates had higher earnings than non-CTE graduates, even when considering background characteristics, post-secondary college and work activities, and quarters worked. Additionally, CTE graduates were more certain about their post-secondary education and career plans and felt well-prepared for employment.

Arum, R. and Way, S. (2004) 'School-community relationships and the early labour market: outcomes of sub-baccalaureat students', in D. Conley and K. Albright (eds), *After the Bell – Family Background and Educational Success*, London and New York: Routledge (pp. 257–289).

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> recruitment assistance 	<ul style="list-style-type: none"> career understanding skills for recruitment

This book chapter examines how a U.S. school-assisted job placement, via a non-curricula mechanism, can boost occupational outcomes for young people, specifically those most likely to be vulnerable to labour market failure. Data is from the High School and Beyond (HSB) survey, a longitudinal study of 1,222 high schools. The sample of individuals selected for analysis is 3,571 young people who possess a high school diploma or less and who report no post-secondary schooling in the four years after high school. Findings suggest that when schools foster relationships with employers and assist in finding employment opportunities for students there are likely to be benefits within the labour market, especially

for women. School-assisted job placements delivered higher wages and reduced unemployment for women in comparison to women who did not participate in such placements.

Athayde, R. (2009) 'Measuring Enterprise Potential in Young People', *Entrepreneurship Theory and Practice*, 33 (2), pp. 481–500.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> enterprise activities (long form) 	<ul style="list-style-type: none"> career understanding skills for work

This study reports on the impact of a specific type of enterprise activity commonly undertaken with the support of employee volunteers. A research instrument was designed to measure 'enterprise potential' in young people using attitudes toward characteristics associated with entrepreneurship. A control-group cross-sectional design was used to investigate the impact of participation in a Young Enterprise Company Program, based on the U.S. Junior Achievement model, in six secondary schools in London, United Kingdom. The study found that participation in a Company Program can foster positive attitudes toward self-employment and that participants displayed greater enterprise potential than non-participants. Demographic differences also emerged in enterprise potential between ethnic groups. Young black people were more positive about self-employment and displayed greater enterprise potential than either white or Asian pupils. A family background of self-employment had a positive influence on pupils' intentions to become self-employed. Finally, the research raises a conceptual issue concerning the multidimensionality of the construct of 'enterprise potential'.

Athayde, R. (2012) 'The impact of enterprise education on attitudes to enterprise in young people: an evaluation study', *Education + Training*, 54 (8/9), pp. 709–726.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> enterprise activities (long form) 	<ul style="list-style-type: none"> skills for work

This paper presents evidence on the impact of enterprise education on young people still at school in London, U.K. The study was designed to measure the effect of participation in a Young Enterprise (YE) Company Programme on young people's attitudes toward starting a business, and on their enterprise potential. A longitudinal pre- and post-test design was used, with a sample of 276 young people. A control group provided a method of isolating the impact of the programme and was used as a test for self-selection bias. An 'attitudes to enterprise' test was administered at the start of the programme and again at the end, nine months later. It was found that participation does have a positive impact on young people's enterprise potential, however this is moderated by other factors such as gender, ethnicity, socio-economic background, and type of school attended. The relatively small sample size limited the extent of multivariate analysis that could be carried out. The paper highlights the importance of context in the delivery of enterprise education. The impact of enterprise programmes is likely to be moderated by a number of other factors such as socio-economic background. The paper cautions against a one-size-fits-all approach to enterprise education.

Bayer, A., Grossman, J. B. and DuBois, D. L. (2015) 'Using volunteer mentors to improve the academic outcomes of underserved students: the role of relationships', *Journal of Community Psychology*, 43 (4), pp. 408–429.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

To understand the relationship between engagement of community-based volunteers working with young people and their academic achievement, the authors conducted a randomised controlled evaluation, involving 1,139 students from 71 schools, of the school-based mentoring program of Big Brothers Big Sisters of America. They found modest but statistically significant improvements in the teacher-rated academic performance and self-reported scholastic efficacy of mentored students. This study explores the causal mechanism behind these effects. The authors found that a close relationship between mentor and protégé appears key to better academic outcomes. Because relationship closeness is not randomly assigned, two-stage least squares and other methods were used to control for potential selection bias. The role of emotional closeness as a mediator of programme effects is evident across mentoring relationships of various lengths and statuses. Students were more likely to feel close to their mentors in programmes that included weekly meetings and opportunities for mentor–protégé pairs to interact outside of a large-group setting.

Bernstein, L., Rappaport, C. D., Olsho, L., Hunt, D. and Levin, M. (2009) 'Impact Evaluation of the U.S. Department of Education's Student Mentoring Program: Final Report' (NCEE 2009-4047), Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

This report summarises the findings from a national evaluation of mentoring programmes funded under the U.S. Department of Education's (ED) Student Mentoring Program. The impact evaluation used an experimental design in which students were randomly assigned to a treatment or control group. Thirty-two purposively selected School Mentoring Programs and 2,573 students took part in the evaluation which estimated the impact of the programs over one school year on a range of student outcomes. The evaluation also describes the characteristics of the programme and the mentors, and provides information about programme delivery. The evaluation found that participation in the programme did not lead to statistically significant impacts on students in terms of (1) academic achievement and engagement, (2) interpersonal relationships and personal responsibility, or (3) high-risk or delinquent behaviour. However, some significant improved academic outcomes were identified for girls, but not for boys.

Bragg, D. D., Loeb, J. W., Gong, Y., Deng, C.-P., Yoo, J.-s. and Hill, J. L. (2002) 'Transition from High School to College and Work for Tech Prep Participants in Eight Selected Consortia', St. Paul, Minnesota: National Research Center for Career and Technical Education, University of Minnesota.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work-related learning job shadowing 	<ul style="list-style-type: none"> enrich learning

This four-year longitudinal study examines student experiences and outcomes in local Tech Prep consortia in eight different regions of the United States. The study provides a quantitative analysis of students' experiences as participants in Tech Prep programs, as well as their post high school educational and employment outcomes. Findings are presented for students identified locally as participants in Tech Prep programmes, referred to as 'Tech Prep participants', as compared to a group of students drawn from the general student population with similar academic performance at high school graduation, referred to as 'non-participants'. The study was undertaken to address fundamental questions about student involvement in Tech Prep programmes and students' educational and employment outcomes after high school. The paper explores the academic achievement of participants in terms of course-taking and progression into further study.

Buckler, N., Coles-Jordan, D., Crisp, P., and Silvera, S. (2015) 'Future First's alumni programme: Evaluation report', Coventry: Centre for the Use of Research and Evidence in Education (CUREE).

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> classroom presentations 	<ul style="list-style-type: none"> career understanding enrich learning skills for recruitment skills for work

During the academic year 2013/2014, U.K.-based Future First ran an alumni programme for a target group of 25 schools based on the proportion of students eligible for free school meals. An alumni programme involves bringing former students back to their schools to talk to learners about careers. This programme included running six alumni events in each of the schools. Sessions were largely targeted at current GCSE students. Sessions included reflecting on the importance of getting a C grade in English and maths, discussing revision strategies, and post-16 career routes. The programme as a whole aimed to increase students' career confidence, motivation to work harder for their exams, GCSE attainment, employability skills, aspirations, and access to work experience. CUREE were commissioned to undertake an evaluation of the programme to establish how far it met these aims. The evaluation included an analysis of a range of evidence including observations of sessions, student and staff perception data gathered through an electronic survey, phone and face-to-face interviews and focus groups carried out during case study visits, and documentary evidence. An analysis of student assessment data was also carried out to test the hypothesis of whether students' improved study skills and learning behaviours, paired with the increased commitment to do well in their studies, result in better grades. Across the five schools for which the analysis of the assessment data was performed, students who attended sessions made better progress in the core subjects than non-participating peers.

Castellano, M., Sundell, K., Overman, L. T. and Aliaga, O. A. (2012). 'Do Career and Technical Education Programs of Study Improve Student Achievement? Preliminary Analyses from a

Rigorous Longitudinal Study', *International Journal of Educational Reform*, 21 (2), pp. 98–118.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work related learning • job shadowing • mock interviews 	<ul style="list-style-type: none"> • enrich learning • skills for recruitment

This U.S. longitudinal study examines the impact of CTE programmes of study on high school academic and technical achievement. Two school districts participated in experimental and quasi-experimental strands of the study. This article describes the sample selection, baseline characteristics, and study design, as well as the career, technical education, and academic achievements of 9th and 10th graders, and qualitative findings from site visits. It is common in both districts for students to prepare resumes, chart out their four-year graduation plans, and participate in mock interviews with community business partners. Such interviews were described as sometimes leading to students being offered jobs after high school. Few differences existed across groups in 9th grade, but by the end of 10th grade, students' test scores, academic grade point averages, and progress to graduation tended to be better for the students in programmes of study (treatment students) than for control/comparison students. Qualitative results suggest that treatment schools have created school cultures around programmes of study that appear to explain improved engagement and achievement.

Golden, S., Golden, S., O'Donnell, L., Benton, T. and Rudd, P. (2005) 'Evaluation of Increased Flexibility for 14 to 16 Year Olds Programme: Outcomes for the First Cohort' (Research Report No. 668), London: Department for Education and Skills.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work related learning • classroom presentations 	<ul style="list-style-type: none"> • enrich learning • skills for work

The Increased Flexibility for 14–16-year-olds Programme (IFP) was introduced in 2002 by the English Department for Education and Skills (DfES) to provide vocational learning opportunities at Key Stage 4 for those young people who would benefit most. The programme, which involved further education colleges, training providers, and employers working in partnership with schools to offer GCSEs in vocational subjects, NVQs, other vocational qualifications, and GNVQs to students, was subsequently extended to three further cohorts of young people. The DfES commissioned an evaluation of the first cohort of participants. This summary presents selected key findings relating to the attainment, progression, attendance, and attitudes of the first cohort of IFP students (2002–2004). Overall, the evaluation found that the majority of students who participated benefited in so far as the majority achieved their qualifications at the end of the programme and nearly all had progressed into further education and training. Overall, students gained more points at KS4 than similar students who did not participate in IFP, although, in the case of GCSEs in vocational subjects and GNVQs, students who took these qualifications through the programme gained fewer points than similar students taking these qualifications who did not participate. Involving employers in the partnership, through using them as visiting speakers, was associated with higher outcomes in qualifications taken through IFP. There was also evidence that participation helped students to develop social skills, confidence in their employability skills—including

interpersonal, communication and problem solving skills—and their attitude towards school, suggesting that, on the whole, the IFP made a valuable contribution to the education of the first cohort of participants.

Golden, S., O'Donnell, L., Benton, T. and Rudd, P. (2006) 'Evaluation of Increased Flexibility for 14 to 16 Year Olds Programme: Outcomes for the Second Cohort' (Research Report No. 786), London: Department for Education and Skills.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work related learning • classroom presentations • work experience • workplace visits 	<ul style="list-style-type: none"> • enrich learning • skills for work

The Increased Flexibility Programme for 14–16-year-olds (IFP) was introduced in 2002. The aim of the programme was to 'create enhanced vocational and work-related learning opportunities for 14 to 16 year olds of all abilities who can benefit most'. This included supporting provision of the GCSEs in vocational subjects. The first cohort of Year 10 students embarked on their programme in 2002 and this was followed by a second cohort in 2003 and subsequent cohorts in the following years. The IFP was the first national programme which formalised partnership working between post-16 and pre-16 education providers (working with employers) to deliver a broader curriculum for young people at Key Stage 4. This report focuses on the outcomes for participants who participated in the programme between 2003 and 2005 (cohort 2) during a time of change in 14 to 19 policy. Overall, the majority of participants in the second cohort of IFP had achieved their qualifications and had achieved in line with expectations given their prior attainment and other background and school-level characteristics. Indeed, those taking NVQs and GNVQs had achieved more points in total than similar students who had not participated in IFP but who may have been undertaking vocational qualifications. The attainment outcomes for the second cohort of participants were similar to those of the first cohort in many respects. The majority (87%) of the representative sample of young people had progressed on to further education or training after completing their involvement in IFP.

Huber, L.R., Sloof, R. and Van Praag, M. (2014) 'The effect of early entrepreneurship education: Evidence from a field experiment', *European Economic Review*, 72, pp. 76–97.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • enterprise activities 	<ul style="list-style-type: none"> • skills for work

The aim of this study is to analyse the effectiveness of early entrepreneurship education. To this end, the authors conduct a randomised field experiment to evaluate an entrepreneurship education programme that is taught worldwide in the final year of primary school. The sample used in this study includes schools in the western part of the Netherlands. The Dutch BizWorld programme started in 2004 and approximately 30,000 children have since then participated. An addition to the original programme from the United States is that the course is taught by an entrepreneur (or someone from the business world) in co-operation with the teacher. The entrepreneur brings real-life examples and experiences into the classroom. The authors focus on pupils' development of entrepreneurship knowledge and a set of non-cognitive skills relevant for entrepreneurial activity. The results indicate that knowledge is unaffected by

the programme. However, the programme has a robust positive effect on non-cognitive entrepreneurial skills. This is surprising since previous evaluations found zero or negative effects. Because these earlier studies all pertain to entrepreneurship education for adolescents, the result tentatively suggests that non-cognitive entrepreneurial skills are best developed at an early age.

Jobs for the Future (1998) ‘School-to-career initiative demonstrates significant impact on young people’, Boston, Massachusetts.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work-related learning 	<ul style="list-style-type: none"> career understanding enrich learning skills for work skills for recruitment

This evaluation report conducted by Jobs for the Future assessed the short and medium term impacts of the ProTech school-to-work programme. ProTech is a school-to-work initiative that links learning and work to make academic learning more alive and relevant for all students. The programme systematically brings business, post-secondary, and other community institutions into partnerships with the schools in order to help young people achieve higher academic standards, expand their access to post-secondary education, and improve their career prospects. ProTech, which now enrolls 650 students, combines academic and technical subjects related to chosen career interests. Through a programme of in-school and worksite learning, students develop 11 competencies, such as the ability to use technology, understand and work within complex systems, and communicate and understand ideas and information. To help it document and enhance the progress and impact of ProTech, the Private Industry Council sent surveys to 163 high school graduates who had completed the school-to-career program; 107 responses were received. As of June 1997, the date of the survey, the young people had completed high school 42, 30, or 18 months earlier. Surveys were also sent to a comparison group of 460 young people who had graduated in 1993, 1994, or 1995 and who, in the spring of their sophomore year of high school, would have met ProTech eligibility standards; of these, 124 responded. The authors found that ProTech students, and African-American students in particular, were more likely to attend college. Moreover, they found that ProTech students were more likely to have remained in college and to have earned a college degree or other certification of post-secondary training. In terms of economic outcomes, the report finds that ProTech students were more likely than their peers to be working and earning more than their comparable peers.

Kashefpakdel, E. and Percy, C. 2016 ‘Career education that works: An economic analysis using the British Cohort Study’, *Journal of Education and Work*, 30 (3), pp. 217–234.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> career events 	<ul style="list-style-type: none"> career understanding

This paper draws on the British Cohort Study 1970 to investigate the link between school-mediated career talks by external speakers and employment outcomes, and finds evidence that young people participating in more career talks at age 14–16 enjoyed a wage premium ten years later at age 26. The correlation is statistically significant, on average, across all students who receive talks at age 14–15, but

remains the case for 15–16-year-olds only if they also described the talks, at the time, as ‘very helpful’. For all age groups, returns were greatest where career talks were felt to have been ‘very helpful’.

Kemple, J. J. (2001) ‘Career Academies: Impacts on Students’ Initial Transitions to Post-Secondary Education and Employment’, New York: Manpower Demonstration Research Corp.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work-related learning 	<ul style="list-style-type: none"> career understanding enrich learning skills for work

U.S. Career Academies are characterized by three basic features: a school-within-a-school organizational structure, curricula that combine academic and career or technical courses based on a career theme, and partnerships with local employers. In a ten-year longitudinal study of the academy model, begun in 1993 in nine schools around the country, some 1,700 academy applicants in the 8th or 9th grade were randomly assigned to their high schools’ academy or any other high school programme. This evaluation found, as of the year after scheduled high school graduation, that although the U.S. Career Academies enhanced the high school experiences of their students in ways that were consistent with the programme’s short-term goals, these positive effects did not translate into changes in high school graduation rates or initial transitions to post-secondary education and jobs. Other key findings included: (1) the Academies had little influence on course content, classroom instructional practices, and standardized test scores; (2) for students at high risk of dropping out, the Academies increased the likelihood of staying in school until the 12th grade, improved attendance, and increased number of credits earned; and (3) relative to similar students nationally, both studied groups had high rates of high school graduation, college enrolment, and employment.

Kemple, J. J. and Willner, C. J. (2008) ‘Career academies: long-term impacts on labor market outcomes, educational attainment, and transitions to adulthood’ (Report), New York: MDRC publications.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work-related learning 	<ul style="list-style-type: none"> career understanding enrich learning skills for work

U.S. Career Academies are a widely used high school reform initiative that aims to keep students engaged in school and prepare them for successful transitions to post-secondary education and employment. Typically serving between 150 and 200 students from Grades 9 or 10 to Grade 12, Career Academies are organized as small learning communities, combine academic and technical curricula around a career theme, and establish partnerships with local employers to provide work-based learning opportunities. Since 1993, MDRC has conducted an evaluation of the Career Academy approach that uses a random assignment research design in a diverse group of nine high schools across the United States. Located in medium- and large-sized school districts, the schools confront many of the educational challenges found in low-income urban settings. The participating Career Academies were able to

implement and sustain the core features of the approach, and they served a cross-section of the student populations in their host schools. This report describes how Career Academies influenced students' labour market prospects and post-secondary educational attainment in the eight years following their expected graduation. The results are based on the experiences of more than 1,400 young people, approximately 85% of whom were Hispanic or African-American. The Career Academies produced sustained earnings gains that averaged 11% (or \$2,088) more per year for Academy group members compared to individuals in the non-Academy group—a \$16,704 boost in total earnings over the eight years of follow-up (in 2006 dollars). These labour market impacts were concentrated among young men, a group that has experienced a severe decline in real earnings in recent years. Through a combination of increased wages, hours worked, and employment stability, real earnings for young men in the Academy group increased by \$3,731 (17%) per year—or nearly \$30,000 over eight years. Overall, the Career Academies served as viable pathways to a range of post-secondary education opportunities, but they do not appear to have been more effective than options available to the non-Academy group. More than 90% of both groups graduated from high school or received a General Educational Development (GED) certificate, and half completed a post-secondary credential. The Career Academies produced an increase in the percentage of young people living independently with children and a spouse or partner. Young men also experienced positive impacts on marriage and being custodial parents.

Koivisto, P., Vuori, J. and Vinokur, A. D. (2010) 'Transition to work: Effects of preparedness and goal construction on employment and depressive symptoms', *Journal of Research on Adolescence*, 20 (4), pp. 869–892.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • classroom presentation 	<ul style="list-style-type: none"> • career understanding • skills for recruitment

This Finnish study examines the mediating role of employment preparedness in improving employment, mental health, and construction of work-life goals among young vocational school graduates who participated in the School-to-Work effectiveness trial. The trial included a one-week intervention programme that focused on enhancing employment preparedness; this was delivered to 25 groups and consisted of a series of five half-day group sessions—a total of 20 hours, including breaks. The number of participants in each intervention group was 6–22, and each group was trained by two co-trainers. One of the trainers was always a teacher from the vocational institute and the other a local special employment service agent. Nine teams of co-trainers had been established to lead the groups. All the group trainers were trained for their tasks. At least one of each pair had training experience from more than one previous School-to-Work group. The trainers used manuals that provided detailed instructions on the implementation of the group activities. In addition, employers were affiliated to local co-operation networks participating in information interviews held in the workshops. In these interviews, participants interviewed employers and gathered information about recruitment and organizational socialization. The participants used workbooks to record their analyses and conclusions; these could function later as a personal employment guidebook. In this trial, 416 graduates of secondary vocational institutes were randomised into a control and experimental group. All the study participants were assessed at baseline, immediately after the intervention, and ten months later. The results showed that the School-to-Work intervention increased employment preparedness, which in turn increased employment at the ten-month follow-up. Furthermore, employment predicted work- and life-related personal goals and lower financial strain, which in turn was associated with lower depressive symptoms.

Legum, H. and Hoare, C. H. (2004) 'Impact of a Career Intervention on At-Risk Middle School Students' Career Maturity Levels, Academic Achievement, and Self-Esteem', *Professional School Counseling*, 8 (2), pp. 148–155.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> classroom presentation career events 	<ul style="list-style-type: none"> career understanding enrich learning

The purpose of this study was to assess the effects of a nine-week U.S. career intervention programme on at-risk middle school students' career maturity levels, self-esteem, and academic achievement. The programme contained presentations which discussed the connection between school and the world of work. At-risk students were asked to write down occupations that were of particular interest. As a way of connecting school with work, guest speakers conducted a discussion with these at-risk pupils regarding the qualifications required for each career cluster. Included in the recommendations for remaining in school was to join a talent search programme aimed at assisting students with study and test-taking skills which also provided information to applicants about scholarships to participating colleges and universities. Another was to seek assistance from teachers when course materials were not understood. This study was based on a pre-test and post-test design using a control group. Data was collected from 27 at-risk middle school students representing the experimental group and 30 at-risk middle school students making up the control group. Modes of measurement consisted of the Crites Career Maturity Inventory (measuring attitude and competency levels), the Coopersmith Self Esteem Inventory, and grades. Data was coded numerically and analysed using inferential tests and analysis of covariance. Qualitative interviews were conducted with teachers of five randomly selected participants from the experimental group to compare self-esteem and academic achievement prior and subsequent to the treatment. Although results revealed that the sample's career maturity attitude, competency levels, and academic achievement improved, such increases were not statistically significant. Notwithstanding this, there was evidence suggesting that the sample's career maturity levels (attitude and competency) and academic performances improved after the career intervention. These findings indicate that as students begin to connect their academic accomplishments with the expectations of the world of work, they are more likely to understand the significance of remaining in school and may make more prudent decisions concerning their short- and long-term futures.

Linnehan, F. (2001) 'The Relation of a Work-Based Mentoring Program to the Academic Performance and Behavior of African American Students', *Journal of Vocational Behavior*, 59 (3), pp. 310–325.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring work experience 	<ul style="list-style-type: none"> enrich learning skills for work

Using a sample of 202 African-American students from four U.S. urban high schools, this study examined participation in a work-based mentoring programme in relation to academic performance and behaviour. The Philadelphia school district sponsors and administers a work-based mentoring programme that is open to high school juniors and seniors. School-to-career personnel solicit organizations throughout the city to identify companies willing to provide employment opportunities and mentors for students. Mentors attend a two-hour training session given by school district personnel prior to meeting and selecting their

students. During these training sessions the mentors are advised of the basic competencies and academic standards the school district has set for all students. Standards have been established in such areas as mathematics, technology, and communication. These standards then are incorporated into a learning plan document co-written by district personnel and the mentor which serves to integrate the student's work experience with the academic curriculum. The plan identifies school activities that are used to enhance a student's competence in each area. Based on the programme's academic goals, the unique characteristics of mentoring programmes, and social learning theory, it was anticipated that participating in the programme would be related positively to grades and attendance. Results indicated that participation for more than half the academic year had a significant, positive relation with students' grade point averages and attendance rates after controlling for their previous year GPA and attendance. This relation was not significant for those who participated in the programme over a shorter period of time.

MacAllum, K., Worgs, D., Bozick, R. and McDonald, D. (2001) 'Transitioning to College and Career: Interim Findings of the LAMP Longitudinal Study', Washington DC: Academy for Educational Development, National Institute for Work Learning.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work-related learning • work experience 	<ul style="list-style-type: none"> • enrich learning • career understanding

The Lansing Area Manufacturing Partnership (LAMP) is an academically rigorous, business- and labour-driven school-to-career program in Lansing, Michigan, that includes business, union, school, and parent partners. The effects of participation in LAMP on transitions from school to higher education and work were examined in a longitudinal study that compared the progress of LAMP students against non-participants from the classes of 1998, 1999, and 2000 at more than 20 high schools. Changes in educational and employment status were tracked through mailed surveys administered every June and December. The LAMP students pursued post-secondary education at higher rates than the comparison groups. As a group, the LAMP students were maintaining good grades and a significant majority were working and attending school at the same time. Compared to the non-LAMP participants, the LAMP students participated in more career development activities during their senior year in high school and appeared to have been better prepared for the transition from high school to college and employment. Many LAMP graduates were initially dissatisfied with their jobs, particularly with their opportunities for training and advancement, and changed jobs at higher rates than the comparison group. However, many LAMP graduates considered their job changes positive steps toward their career goals.

Mann, A., Kashfepakdel, E. T., Rehill, J. and Huddleston, P. (2017) 'Contemporary transitions: Young Britons reflect on life after secondary school and college' London: Education and Employers.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work experience • career events • mentoring 	<ul style="list-style-type: none"> • career understanding • enrich learning • skills for recruitment

<ul style="list-style-type: none"> • enterprise activities • job shadowing 	<ul style="list-style-type: none"> • skills for work
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This report sets out findings from a survey of 1,744 young British adults aged 19-24. The survey, undertaken on behalf of Education and Employers by YouGov, investigates the experiences of respondents as they engage in transitions which take them from education towards the working world. The focus of the report is on work related activities (notably episodes of employer engagement in education) commonly undertaken by schools and colleges to help prepare students for such transitions, relating specifically to employer engagement in education. The report sets out the recollections of these young adults on actions taken by educational institutions to prepare them for the working world; their perceptions of the quality of their experiences; where they feel greater preparation would have been valued; and, using statistical regression analysis, what it was that schools and colleges did which actually helped with those transitions.

Maxwell, N. L. and Rubin, V. (1997) 'The Relative Impact of a Career Academy on PostSecondary Work and Education Skills in Urban, Public High Schools' (Discussion Paper Number 97-2), Hayward, CA: The Human Investment Research and Education Center (HIRE).

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work-related learning 	<ul style="list-style-type: none"> • career understanding • enrich learning • skills for recruitment • skills for work

The relative impact of U.S. Career Academies on post-secondary educational attainment, knowledge, and skills acquired in urban public high schools was examined through an analysis of single-district and national databases. The national data was obtained from the first and third follow-up surveys of the National Education Longitudinal Study. Compared with the students in the national sample, students in the single-district sample were less likely to be white (less than 10% versus 44.7%), more likely to receive free lunches (40% versus 28%), and more likely to have limited English proficiency (more than 25% versus 14%). Of the 10,102 students in the single-district sample, 1,257 attended career academies. The analysis showed that Career Academy students enjoyed higher high school graduation rates and college enrolment levels than comparable peers. Appended are the following: description of variables; probit estimation of educational attainment; ordinary least square analysis of high school human capital production; and demographic differences identified through probit estimation of educational attainment.

Maxwell, N. L. and Rubin, V. (2002) 'High school career academies and post-secondary outcomes', *Economics of Education Review*, 21 (2), pp. 137–152.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work-related learning • work experience 	<ul style="list-style-type: none"> • enrich learning

This paper focuses on the outcomes associated with one type of U.S. school-to-work programme, the Career Academy. Career Academies co-ordinate curriculum activities around a single occupation,

profession, and industry that is in demand in the local labour market. Although students do not earn formal occupational skill credentials, they often work in the industry of focus during the summer after their junior year. Employers are actively involved in building curriculum and in donating time as mentors and workplace supervisors. By comparing the outcomes from Career Academy programmes with those from more traditional programmes, the authors evaluate their potential for improving the post-secondary experiences over students from more traditional curriculum programs. Using both single-district and national (across-district) databases, they show that the Career Academy has the potential for increasing education levels to those of students describing themselves as having followed an academic programme. However, it is argued that the Career Academy may not be equally effective for all students, and other studies have shown that they carry relatively high marginal costs over more traditional programmes.

McComb-Beverage, S. K. (2012). 'An Experimental Design: Examining the Effectiveness of the Virginia Career View Program on Creating 7th Grade Student Career Self-Efficacy', Liberty University, Lynchburg, VA.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> classroom presentation career events 	<ul style="list-style-type: none"> career understanding

In the U.S. state of Virginia, the Virginia Career View programme has been designed to assist school personnel with the career education of middle school students. The activities in the regular Career View curriculum include an introduction to vocational education with a guest speaker from the local business community, a tour of the local vocational centre, and an orientation style tour of the local high school. This quantitative research study measured the effectiveness of the Virginia Career View programme on 7th grade students' career pathway identification and career self-efficacy. Upon completion of the programme, students in the experimental group and control group completed the Career Decision Self-Efficacy Scale – Short Form. This study included 148 randomly assigned 7th grade students from Alpha Middle School. A multivariate analysis of variance (MANOVA) was used to analyse the association between the dependent variable, career self-efficacy, and the independent variable, Virginia Career View. Results indicated a statistically significant relationship between the Virginia Career View programme and student self-efficacy and career pathway identification. Students in the experimental group showed significantly higher levels of self-efficacy related to planning, occupational information, goal selection, self-appraisal, problem solving, and total self-efficacy compared to those students in the control group. Students in the experimental group were significantly more capable of identifying a career pathway that matched their career interests and skills compared to those students in the control group.

Miller, A. (1999) 'Business mentoring in schools: does it raise attainment?', *Education & Training*, 41 (2), pp. 73–78.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

The article describes research into the impact of business and community mentoring in schools on students' attainment. The U.K. research, which was conducted in seven schools during the 1996/1997 academic year, was funded by the Department for Education and Employment and three Training and

Enterprise Councils. An overview of mentoring schemes and models is followed by analysis of objectives for mentoring from various perspectives. Value-added analysis was used to measure the impact of mentoring on a sample of mentored students, compared with a similar group of non-mentored students acting as a control group. The research found a mixed picture in the seven schools involved, with girls out-performing boys across all schools and a small, but positive, impact on the attainment of mentored students.

Miller, S., Connolly, P. and Maguire, L. (2011) 'A Follow-Up Randomised Controlled Trial Evaluation of the Effects of Business in the Community's Time to Read Mentoring Programme', Belfast: Centre for Effective Education, Queen's University Belfast.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> reading partners 	<ul style="list-style-type: none"> enrich learning

This report presents the findings from a second, follow-up RCT evaluation of the Time to Read programme. Time to Read began in five primary schools in Belfast with employee volunteers from Northern Ireland Electricity. Each volunteer spent one hour of company time each week working on a one-to-one basis with primary school children with the aim of improving the children's reading skills. A 2011 study led by Sarah Miller used a revised methodology within a large trial of 512 children aged 8–9, each identified as being below average in reading ability and lacking confidence in reading, with 263 randomly assigned to participate in weekly one-hour sessions with employee volunteers over a school year. When compared to a control group using statistical testing, the researchers found the programme to be 'effective in improving a number of reading outcomes for pupils' with impact strongest in relation to decoding, reading rate, and reading fluency.

National Audit Office (2010) *Educating the next generation of scientists*, London: The Stationery Office.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> classroom presentations 	<ul style="list-style-type: none"> enrich learning

This U.K. report aims to evaluate the factors that encourage the uptake of mathematics and science before the age of 18. Analysis is drawn from a mixed-method approach combining surveys of 1,274 pupils in the 'STEM pipeline' in the U.K., focus groups and interviews, a literature review, analysis of the National Pupil Database, ONS population estimates, and examination data. Findings reveal the following factors to be critical in determining the number of young people taking maths and science: careers information and guidance, quality and quantity of school and science facilities, quality and quantity of science teachers, image and interest, and the availability of separate GCSE sciences ('triple science'). Based upon such factors, the report explores the effectiveness of a selected number of programmes aiming to improve up-take, including the involvement of 'STEM ambassadors'—employee volunteers—working with secondary schools primarily through science clubs. Statistical analysis identifies a small attainment premium linked to student engagement with STEM ambassadors.

Neild, R. C., Boccanfuso, C. and Byrnes, V. (2015) 'Academic Impacts of Career and Technical Schools', *Career and Technical Education Research*, 40 (1), pp. 28–47.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work-related learning • work experience 	<ul style="list-style-type: none"> • enrich learning

This U.S. study presents findings from three cohorts of students—the classes of 2003, 2004, and 2005, in the School District of Philadelphia—that were admitted to the district’s Career and Technical Education (CTE) schools through a randomised lottery process. This study takes advantage of this so-called ‘natural experiment’ to compare high school academic outcomes for successful lottery applicants with those who failed to get a CTE place. Results find that CTE students had significantly better outcomes in terms of graduation rates, credit accumulation, and the successful completion of the college preparatory mathematics sequence—algebra 1, algebra 2, and geometry. Results for other outcomes, such as the completion of science and foreign language course sequences, overall grade point average, and mathematics and reading comprehension achievement, were inconsistent across cohorts and statistical tests, neither favouring nor against students accepted to CTE schools.

Neumark, D. (2004) ‘The Effects of School-to-Career Programs on Postsecondary Enrollment and Employment’, San Francisco: Public Policy Institute of California.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work experience • job shadowing • enterprise activities • careers events 	<ul style="list-style-type: none"> • enrich learning • skills for work

This U.S. report uses national data from the 1997 National Longitudinal Survey of Youth (NLSY97) to evaluate the effectiveness of the types of school-to-career (STC) programmes that were encouraged and supported in California by the grants received by the state from the federal School-to-Work Opportunities Act of 1994 (STWOA). In particular, the empirical analysis focuses on whether participation in these STC programmes increases post-secondary college enrolment or employment. STWOA provided more than \$1.5 billion over a five-year period to support increased school-to-work activities in U.S. public schools. This money was made available to states to create STC systems entailing co-operation among schools, private business, and government bodies (Office of Technology Assessment, 1995). STWOA set out to increase (1) school-based initiatives such as career links to academic curriculum and career awareness activities, (2) work-based activities such as job shadowing, internships, and apprenticeships, and (3) connecting activities, such as the development of partnerships with employers and post-secondary institutions.

Neumark, D. and Rothstein, D. (2007). ‘Do School-to-Work Programs Help the “Forgotten Half”?’, in Neumark, D. ed. *Improving School to Work Transitions*. New York: Russell Sage Foundation.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work-related learning • job shadowing 	<ul style="list-style-type: none"> • career understanding • enrich learning

<ul style="list-style-type: none"> • mentoring • enterprise activities • work experience 	<ul style="list-style-type: none"> • skills for work • skills for recruitment
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •

This paper tests whether U.S. school-to-work (STW) programmes are particularly beneficial for those less likely to go to college in their absence—often termed the ‘forgotten half’ in the STW literature. The empirical analysis is based on the National Longitudinal Survey of Youth (NLSY97) which allows the study six types of STW programmes including job shadowing, mentoring, ‘coop’, school enterprises, ‘tech prep’, and internships or apprenticeships. For men, there is evidence that STW programme participation is particularly advantageous for those in the forgotten half. Specifically, mentoring and coop programmes increase post-secondary education outcomes, and coop, school enterprise, and internship or apprenticeship programmes boost employment and decrease idleness after leaving high school. The results obtained from the analysis provide some evidence of differences in the effects of the types of STW programmes covered in the NLSY97. For women in the forgotten half, there is less evidence that STW programmes are particularly effective in increasing education outcomes, although internship or apprenticeship programmes do lead to positive earnings effects.

Neumark, D. and Rothstein, D. (2006) ‘School-to-career programs and transitions to employment and higher education’, *Economics of Education Review*, 25(4), pp.374-393.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • work-related learning • job shadowing • mentoring • enterprise activities • work experience 	<ul style="list-style-type: none"> • career understanding • enrich learning • skills for work • skills for recruitment

The 1994 U.S. Federal School-to-Work Opportunities Act (STWOA) provided more than \$1.5 billion over five years to support increased career preparation activities in the country’s public schools. This paper uses the National Longitudinal Survey of Youth (NLSY97) to assess the effects of School to Career (STC) programmes on transitions to employment and higher education among youths leaving high school, with a focus on estimating the causal effects of this participation given possible non-random selection of youths into STC programmes. To summarise, the analysis points to a number of beneficial effects from certain types of STC programmes. In particular, job shadowing and school enterprise programmes increase post-high school college attendance, while coop and internship or apprenticeship programmes increase employment, although the statistical evidence for internship and apprenticeship programmes is weaker. Working in the other direction, ‘tech prep’ programmes appear to reduce college attendance without any offsetting increases in employment. Thus, this evidence suggests that specific types of STC programmes can be used to increase post-secondary education and employment.

Page, L. C. (2012) ‘Understanding the impact of career academy attendance: An application of the Principal Stratification Framework for Causal Effects Accounting for partial compliance’, *Evaluation Review*, 36 (2), pp. 99–132.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work-related learning 	<ul style="list-style-type: none"> career understanding enrich learning skills for work

This paper investigates the medium to long term impacts that can be expected when a young person attends a U.S.-based Career Academy—a secondary education approach in which schools structure curricula and student opportunities around career themes. Results from MDRC’s longitudinal, random-assignment evaluation of U.S. Career Academy high schools reveal that several years after high school completion, those randomised to receive the academy opportunity realised a \$175 (11%) increase in monthly earnings, on average. In this paper, this data is subject to further study. The author investigates specifically whether higher wage returns could be identified for students who completed the full course duration. The analysis focuses on a sample of 1,306 students across seven sites in the MDRC evaluation. Participation was measured by number of years of academy enrolment, and the outcome of interest is average monthly earnings in the period of four to eight years after high school graduation. The author estimates an average causal effect of treatment assignment on subsequent monthly earnings of approximately \$588 among males who remained enrolled in an academy throughout high school and more modest impacts among those who participated only partially.

Percy, C. and Mann, A. (2014) ‘School-mediated employer engagement and labour market outcomes for young adults: Wage premia, NEET outcomes and career confidence’, in Mann, A., Stanley, J. and Archer, L. (eds), *Understanding Employer Engagement in Education: Theories and Evidence*, London: Routledge (pp. 205–220).

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work experience careers events mentoring enterprise activities 	<ul style="list-style-type: none"> career understanding enrich learning skills for work skills for recruitment

This chapter draws on survey evidence of young British adults to investigate correlations between the extent of teenage school-mediated workplace exposure and later earnings and employment outcomes. The study considers careers advice as one of four primary co-curricular activities that also includes work experience, business mentoring, and enterprise education. The final analysis looks at volume of participation in such employer engagement activities. After applying controls for background characteristics such as age, school type, and geographical location the authors find that those who have greater levels of contact with employers through school or college have 1.0–1.7% better odds of being in education, employment, or training and—if in full time employment—will be earning 10–25% more on average. This builds on previous work by Mann and Percy (2014) who reported similar evidence of wage premiums and suggested that any causal link from school-mediated employer contact to wage outcomes is likely to be driven more by increased social capital, as witnessed in improved access to non-redundant, trustworthy information and social network development, than by the development of either technical or ‘employability’ skills.

Peterman, N. E. and Kennedy, J. (2003) 'Enterprise Education: Influencing Students' Perceptions of Entrepreneurship', *Entrepreneurship Theory and Practice*, 28(2), pp.129-144.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> enterprise activities 	<ul style="list-style-type: none"> career understanding skills for work

This Australian research examines the effect of participation in an enterprise education programme on perceptions of the desirability and feasibility of starting a business. Changes in the perceptions of a sample of secondary school students enrolled in the Young Achievement Australia (YAA) enterprise programme are analysed using a pre-test post-test control group research design. After completing the enterprise programme, participants reported significantly higher perceptions of both desirability and feasibility. The degree of change in perceptions is related to the positiveness of prior experience and to the positiveness of the experience in the enterprise education programme. Self-efficacy theory is used to explain the impact of the programme. Overall, the study provides empirical evidence to support including exposure to entrepreneurship education as an additional exposure variable in entrepreneurial intentions models.

Rhodes, J. E., Grossman, J. B. and Resch, N. L. (2000) 'Agents of Change: Pathways Through Which Mentoring Relationships Influence Adolescents' Academic Adjustment', *Child Development*, 71(6), pp.662–671.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

A conceptual model was tested in which the effects of mentoring relationships on adolescents' academic outcomes were hypothesized to be mediated partially through improvements in parental relationships. The parameters of the model were compared with those of an alternative, in which improved parental relationships were treated as an outcome variable rather than a mediator. The study included 959 young adolescents (M age = 12.25 years), all of whom applied to Big Brothers Big Sisters programmes. The adolescents were randomly assigned to either the treatment or control group and administered questions at baseline and 18 months later. The hypothesized model provided a significantly better explanation of the data than the alternative. In addition to improvements in parental relationships, mentoring led to reductions in unexcused absences and improvements in perceived scholastic competence. Direct effects of mentoring on global self-worth, school value, and grades were not detected but were instead mediated through improved parental relationships and scholastic competence. Implications of the findings for theory and research are discussed.

Schwartz, S. E. O., Rhodes, J. E., Chan, C. S. and Herrera, C. (2011) 'The impact of school-based mentoring on youths with different relational profiles', *Developmental Psychology*, 47 (2), pp. 450–462.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

Associations between young people's relationship profiles and mentoring outcomes were explored in the context of a national, randomised study of 1,139 young people (54% female) in geographically diverse U.S. Big Brothers Big Sisters school-based mentoring programmes. The sample included those in Grades 4–9 from diverse racial and ethnic backgrounds, the majority of whom were receiving free or reduced-price lunch. Latent profile analysis, a person-oriented approach, was used to identify three distinct relational profiles. Mentoring was found to have differential effects depending on young people's pre-intervention approach to relationships. In particular, those who, at baseline, had satisfactory, but not particularly strong, relationships benefited more from mentoring in terms of educational outcomes than did those with profiles characterised by either strongly positive or negative relationships.

Schwartz, S. E. O., Rhodes, J. E. and Herrera, C. (2012) 'The influence of meeting time on academic outcomes in school-based mentoring', *Children and Youth Services Review*, 34 (12), pp. 2,319–326.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

This study explores the role of mentor–student meeting time on academic performance within school-based mentoring. Participants in the study (N = 1,139) were part of a national evaluation of the U.S. Big Brothers Big Sisters school-based mentoring programmes, approximately half of whom had been randomly assigned to receive mentoring at their schools. Within the treatment group, different programmes arranged mentor-student meetings at various times: 44% met after school, 25% met during the school day (excluding lunch), 6% met during lunch, and 26% met at various times during and after school. Among academically at-risk youth, the impact of school-based mentoring on academic outcomes was moderated by the time when meeting took place. Specifically, academically vulnerable youth derived significant academic benefits from mentoring in programmes that met after school or during lunch. In programmes that met during school as a pull-out programme, there was no evidence of benefits and some evidence of negative effects on academic outcomes.

Shandra, C. L. and Hogan, D. P. (2008) 'School-to-work program participation and the post-high school employment of young adults with disabilities', *Journal of Vocational Rehabilitation*, 29 (2), pp. 117–130.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring job shadowing enterprise activities work experience careers events 	<ul style="list-style-type: none"> career understanding skills for work

Previous research on the education-to-employment transition for students with disabilities has suggested that participation in school-to-work programmes is positively associated with post-high school success. This article utilises data from the U.S. National Longitudinal Survey of Youth 1997 (NLSY97) to extend these findings in several ways. First, the authors assess the efficacy of specific types of school-based and work-based initiatives, including job shadowing, mentoring, co-operative education, school-sponsored

enterprise, technical preparation, internships, and career major. Next, the authors extend the usual focus on the employment outcomes of work status and financial compensation to consider job-specific information on the receipt of fringe benefits. Overall, results from longitudinal multivariate analyses suggest that transition initiatives are effective in facilitating vocational success for this population; however, different aspects of school-to-work programmes are beneficial for different aspects of employment. School-based programmes are positively associated with stable employment and full-time work while work-based programmes most consistently increase the likelihood that young people with disabilities will be employed in jobs that provide fringe benefits. Analyses also indicate that—once individuals with disabilities are stably employed—they can be employed in ‘good’ jobs that provide employee benefits.

Thiessen, V. and Looker, E. D. (1999) ‘Investing in Youth: The Nova Scotia School-to-Work Transition Project’ (No. 0-662-27883-6), Human Resource Development Canada, Ottawa (Ontario) and Nova Scotia Department of Education and Culture, Halifax.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> work experience 	<ul style="list-style-type: none"> career understanding skills for work

Economic, technological, and social changes occurring around the world have produced challenges for young people, symbolized by persistently high youth unemployment rates despite increasing educational attainments and a shrinking youth population. This book provides an overview of the initiatives undertaken by Canada and the province of Nova Scotia to address these challenges, and focuses on the Nova Scotia School-to-Work Transition (NSSWT) programme. This programme had a common set of parameters and objectives but allowed site-specific variations in implementation. The study highlights successful proposals and the similarities and the differences among the six actual implementations. Generally, the programmes included an in-school component of 20–60 hours per year in Grades 11 and 12 devoted to career exploration, career guidance, and job skills, and a work experience component of 125–200 hours per year in the two grades. Females made up about two-thirds of participants, who otherwise reflected a range of backgrounds and characteristics. Programme completion rates were low: 54% and 37% for the two cohorts studied. Student outcomes yielded a mixed message. Participants who completed the programme were very clear that it had met their expectations. However, there were few differences between participants and the comparison group in academic achievement, skills enhancement, higher education outcomes, or employment outcomes.

Thompson, L. A. and Kelly-Vance, L. (2001) ‘The impact of mentoring on academic achievement of at-risk youth’, *Children and Youth Services Review*, 23 (3), pp.227-242.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> mentoring 	<ul style="list-style-type: none"> enrich learning

This U.S. study examines the impact of mentoring on the academic achievement of at-risk young people involved in Big Brothers/Big Sisters. Academic achievement tests (pre- and post-tests) were individually administered to 12 boys in the treatment group (that had a mentor) and 13 boys in a control group (those on a waiting list to receive a mentor) over a nine-month period. Results indicated that boys in the

treatment group made significantly higher academic gains than the control group, even after controlling for ability.

Torgerson, C. J., King, S. E. and Sowden, A. J. (2002) 'Do Volunteers in Schools Help Children Learn to Read? A Systematic Review of Randomised Controlled Trials', *Educational Studies*, 28 (4), pp. 433–444.

Employer engagement activities	Outcome area(s)
<ul style="list-style-type: none"> • reading partners 	<ul style="list-style-type: none"> • enrich learning

The aim of unpaid volunteer classroom assistants is to give extra support to children learning to read. The impact of using volunteers to improve children's acquisition of reading skills is unknown. To assess whether volunteers are effective in improving children's reading, the authors undertook a systematic review of all relevant randomised controlled trials. An exhaustive search of all the main databases was carried out (that is, BEI, PsycInfo, ASSIA, PAIS, SSCI, ERIC, SPECTR, and SIGLE). Eight experimental studies were identified, of which seven were RCTs; one was excluded because it did not meet the inclusion criteria. One RCT randomised intact classes and the other six studies randomised individual children and could therefore be included in a meta-analysis. All of the trials were fairly small, the largest including 99 pupils. Four of the trials showed a positive outcome while three showed a negative effect; the remaining study was equivocal. The authors pooled the four most homogeneous trials. The pooled data indicated a not statistically significant effect size of 0.19 ($p = 0.54$; 95% confidence interval, -0.31 to 0.68). Overall, volunteering appeared to have a small effect on reading outcomes. However, the confidence intervals were wide, which could conceal a potentially large benefit or a harmful effect. Thus, more good quality RCTs are required in order to provide more conclusive evidence.

Part 3: Towards effective practice in employer engagement in education

There is nothing new about employer engagement in education. It has been part of U.K. schooling for more than fifty years and is by no means an idiosyncrasy of the British education system: countries across the OECD demonstrably value the importance of employers working with all types of schools to enhance outcomes for young people. This two-part study has reviewed policy literature and qualitative and quantitative studies in order to make sense of employer engagement and offer a strategic perspective on its utility within educational provision.

What is employer engagement in education?

This study follows Stanley and Mann (2014) in arguing that employer engagement is best understood as a *process* through which members of the economic community can engage in the educational experiences of young people through the aegis of their school or college. Employer engagement is most easily understood and observed through activities which are common within schools (work experience placements, job shadowing, careers sessions, mentoring, enterprise activities, reading and number partners, mock interviews, CV workshops, work-place visits, and work-related learning). Within all such activities, it is the role of the employer or employee that gives employer engagement its distinctive quality.

From an educational perspective, employer engagement activities can be classified in one of three ways.

- They can simply serve to provide teaching staff with an extra pair of hands in the classroom to achieve traditional educational objectives and so serve to *supplement* conventional teaching. This is the case, for example, with many reading partner programmes.
- More importantly, employer engagement can serve as a resource which is *complementary* and especially *additional* to the usual repertoire of tools available to practitioners. Mentoring programmes, for example, which are designed to underpin academic achievement, can be understood as an alternative means to secure long standing goals. For Stanley and Mann, this is a *complementary* approach to teaching and learning.
- However, where employer engagement offers its purest and most distinct contribution is in its provision of educational experiences which are *additional* to those offered by conventional schooling and qualifications: providing young people with insights into the labour market and opportunities to develop skills of relevance to employment and recruitment processes which are much more difficult to achieve in the absence of employers.

In Part 1 of this study, both policy and research literature is reviewed to make sense of the purposes of employer engagement in education: what outcomes of meaning can be anticipated for young people. By considering evidence of impacts in educational and economic outcomes, four broad outcome areas are identified for young people:

Employer engagement in education to enhance young people's understanding of jobs and careers

Broadening and raising career aspirations and understanding of personal routes into different occupations (and the realism of such career ambitions), enabling young people to better navigate progression through education, informing decision-making on what to study, where to study, and how hard to study—improving understanding of the purposes of education and qualifications.

Employer engagement in education to provide young people with knowledge and skills demanded by the contemporary labour market

Enabling young people to build complementary skills such as creative problem-solving and team-working through applied learning, simulated experiences, and opportunities to understand the operation of contemporary workplaces.

Employer engagement in education to provide young people with knowledge and skills demanded for successful school-to-work transitions

Preparing young people to optimize their chance of success in the competition for employment in the early labour market by providing them with authentic, relevant experiences and practical insights into how recruitment processes work and contemporary workplaces operate.

Employer engagement in education to enrich education and underpin pupil attainment

Harnessing the capacity of employer engagement to supplement teaching resource within the classroom and drawing on employer input to contextualize learning, but, most importantly, presenting young people with authentic testimony on the connection between educational inputs and employment outcomes.

The identification of these broad outcome areas provides practitioners and policy-makers with objectives to shape the design and delivery of episodes of employer engagement.

What is the quality of the evidence base with regard to employer engagement in education?

As suggested by the recent EEF study, 'Careers Education: International Literature Review' (Hughes *et al.*, 2016), a research literature on the impacts of employer engagement in education does now exist. In Part 2 of this study, 42 studies from across the OECD countries are identified. Studies—which are overwhelmingly focused on secondary education and split evenly between randomised controlled trials and quasi-experimental analyses of longitudinal datasets—are predominantly from the United States or the United Kingdom. Just under half the studies considered presented evidence of largely positive educational and economic outcomes for young people. As illustrated by Hughes and colleagues, while the scale of economic outcomes are often considerable (with young adults expecting in many cases to earn between 10% and 20% more than comparable peers lacking such school-mediated experiences), educational outcomes can be more modest. While no study argued that employer engagement was actively to the detriment of young people, the remainder of studies suggested mixed outcomes with variation observed in the character and distribution of outcomes. While certainly the literature has many weaknesses (discussed below), it is no longer possible to dismiss it as being unfit for purpose—it does tell a consistent story. Many young people taking part in episodes of employer engagement can be expected to benefit from the experience. However, benefits can by no means be taken for granted and are likely to vary according to the type of young person engaging in the activity, the type of school they attend, the age they engage, and their opinion about the quality of the activity in which they participated.

What difference can employer engagement in education be expected to make to the lives of young people?

In making sense of employer engagement, over the last decade long standing assumptions around the capacity of the phenomenon to enhance human capital, whether in terms of technical or 'employability' skills, have been challenged by theorists making use of insights from social and cultural capital theories.

Jones *et al.* (2016) argue that the primary result of employer engagement in education is to build the social and cultural capital of young people. Drawing on written testimony from young adults, they uncover limited evidence of human capital accumulation:

*'The value of employer engagement for young people often lies in its perceived authenticity. It acts more as a trusted route towards social and cultural capital than as a direct accretion of human capital. Common to young people of all educational backgrounds is a perception that workplace staff communicate more directly and truthfully about labour market realities than other sources. These 'trustworthy reciprocal social relations' (Raffo and Reeves, 2000) are key to both enhancing young people's self-confidence and giving them the "weak ties" needed to progress' (Jones *et al.*, 2016, p. 18).*

The analysis speaks powerfully to the work of U.S. sociologist Mark Granovetter whose studies have illustrated the ultimate economic value of social networks. Granovetter's demonstration (1973) that possession of social networks which are broad and shallow (that is, that an individual knows lots of individuals who all, in turn, are knowledgeable in different ways) can be routinely linked to improved employment outcomes draws, in part, on the function of the network as a mechanism for distribution of information. Knowing many different people, a well-connected individual could expect to gain easier access to new and useful (known to Granovetter as 'non-redundant, trusted') information about labour market opportunities than a peer whose social network is concentrated in a distinct economic area. For a young person in an educational setting, the role of employer engagement can replicate the function of social networks providing young people with access to information about the operation of the labour market which is commonly perceived to be authentic. With young people's career ambitions commonly narrow (Mann *et al.*, 2013) and often unrealistic (Yates *et al.*, 2010; Sabates *et al.*, 2011), access to new episodes of employer engagement provide the potential for young people to expand their own resources of information connecting their current situation within an educational environment to an imagined future within the economic community. By definition, therefore, employer engagement is a highly personalized experience. Drawing on an ethnographic study of Manchester pupils aged 14–16 in extended school-mediated work experience placements, Raffo and Reeves (2000) argue:

'What we have evidenced is that, based on the process of developing social capital through trustworthy reciprocal social relations within individualized networks, young people are provided with an opportunity to gain information, observe, ape and then confirm decisions and actions with significant others and peers. Thus, everyday implicit, informal and individual practical knowledge and understanding is created through interaction, dialogue, action and reflection on action within individualized and situated social contexts.

[...]

[T]here is also evidence in our research of individual young people having their social relations enriched by outside, yet authentic and culturally appropriate, significant others. In these situations, individual strategic decisions about life choices are being affected by external agencies and actors – external in that they are potentially beyond the structuring influence of locality and class. This results in these individualized systems of social capital for individuals becoming more open and fluid, with outside, symbolically rich, resources impacting more freely on their lives' (pp. 151, 153).

The insight that employer engagement can be effectively understood through the lens of social and cultural capital—that encounters with new people can lead a young person to change an important

element of their own thinking about themselves and their own sense of agency—finds validation within the limited research literature. A number of U.K. studies highlight both the importance of volume of encounters and student perception on the value of encounters (the effective affirmation that something new and useful was secured) to later economic gains (Mann and Percy, 2014; Percy and Mann, 2014; Kashefpakdel and Percy, 2016; Mann *et al.*, 2017). From research insights, implications for practice follow (Box 1).

Box 1: The characteristics of effective employer engagement in education in enhancing young people’s understanding of jobs and careers

The literature suggests that effective delivery of employer engagement in education will be:

Authentic. It will enable first-hand encounters between children and young people and workplaces and individuals from the world of work.

(Jones *et al.*, 2016; Raffo and Reeves, 2000; Linnehan, 2004.)

Recurrent. Volume matters: a number of studies highlight the importance of at least four memorable encounters across schooling.

(Mann and Percy, 2014; Percy and Mann, 2014; Kashefpakdel and Percy, 2015; Mann and Percy, 2014; Percy and Mann, 2014; Mann *et al.*, 2017.)

Valued. Where young people themselves testified that episodes of employer engagement were of value to them, the evidence suggests that they were right and better outcomes followed.

(Kashefpakdel and Percy, 2015; Mann *et al.*, 2017a.)

Varied. While employer engagement activities can be remarkably versatile in enabling young people to secure outcomes of value, different activities can be associated with different outcomes and with improving outcomes for different types of pupil.

(Mann *et al.*, 2016.)

Contextualised. Where provision is undertaken within the context of effective careers provision, some studies highlight—and logic suggests—improved outcomes.

(Percy and Kashefpakdel, 2016.)

Personalised. Evidence suggests that deficit models should be applied and young people entering educational experiences with limited access to relevant work-related networks should be targeted with more intense interventions.

(Norris and Francis, 2014; Mann and Kashefpakdel, 2016; Mann *et al.*, 2017.)

Started at a young age. With benefits appearing to be more driven by changes in attitude and expectation than the growth of human capital, interventions should begin in primary schooling where identity formation can be supported through career learning activities within and outside of the classroom.

(Mann *et al.*, 2017b.)

Which employer engagement interventions have the greatest promise for improving school outcomes?

Part 1 of this study concludes by arguing that individual employer engagement activities are best seen from the perspective of the outcome to which they are most supportive. Whereas some activities can be clearly associated with a specific outcome (for example mock interviews and skills for recruitment), others can contribute to multiple outcomes. Testimony from educational professionals is drawn on to illustrate the importance of variety in provision made available to young people. The analysis implies that policy-makers and practitioners should take a strategic approach to employer engagement, using it as a tool to enable young people to gain benefit across the four outcome areas. This might mean that individual activities might be used to support multiple objectives.

Where is further research most needed?

The typology presented in Part 1 suggests that future research would benefit by drawing on theoretical insights into the character and impact of employer engagement in education—that it should explore and take account of:

- the social backgrounds of young recipients;
- the quantity and quality of activities;
- the broad outcomes to which employer engagement can be expected to contribute; and
- the character of change in self-perception associated with exposure to authentic interactions with the working world.

As the literature review set out in Part 2 shows, a literature making use of experimental and quasi-experimental research methodologies does now exist, but it is severely limited. Going forward, immediate priorities for future research relate to:

- primary school provision; and
- studies which focus specifically on the uses of employer engagement to enhance—
 - careers understanding,
 - skills for recruitment, and
 - skills for work.

Opportunities exist to make greater use of longitudinal datasets and combined datasets (notably the National Pupil Database) to explore impacts on specific types of school pupil. In this work, and in the development of randomised controlled trials, consideration should be given to a growing range of qualitative publications which capture teacher and student perspectives on how individuals might be expected to respond to their engagements with employers based on their social backgrounds and circumstances. In so doing, as well as exploring questions relating to the *effectiveness* of employer engagement in education, opportunity emerges to better understand how the phenomenon relates to questions of *equity* in educational provision. As Granovetter, Bourdieu and other scholars stress, access to social capital is a resource which is inherently unequally distributed across society, but which can be, through complex processes, transformed into an economic resource. For governments, it becomes consequently an imperative to harness the enormous amount of goodwill across places of employment to support schools and colleges and to effectively socialise and channel social capital towards areas of greatest benefit.

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