Current education policy is urging the development of more vocational learning opportunities for young people and adults. However, our current knowledge base about the effectiveness of vocational learning is sparse and requires urgent development. This report critically reviews a range of evidence on different vocational learning programmes, their purposes and outcomes, and what we know about the learning processes involved. The findings will be of interest to teachers and trainers, managers, inspectors and policy-makers.
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The Learning and Skills Research Centre

The LSRC is an independent centre for strategic research to inform long-term policy development and to improve practice in post-16 learning. Based at the Learning and Skills Development Agency (LSDA), the centre identifies key priorities, commissions major studies and ensures that research findings clearly and usefully inform practitioners, policy-makers and the research community. In recent years, the government has supported the development of evidence-informed policy and the use of research to improve practice. The Department for Education and Skills (DfES) has established a National Education Research Forum (NERF) and is looking to other sectors, such as health, to see how research can achieve a stronger impact on policy and practice. A number of major research centres that focus on all phases of education have been established by the DfES. The LSRC is the first centre supported by the DfES to focus solely on post-16 learning.
Modelling a vocational learning system for the 21st century

Outcomes and processes in vocational learning
A review of the literature

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Department of Educational Studies,
University of Oxford
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The project consultants Alison Fuller, Ewart Keep, Prue Huddleston and Hanne Shapiro provided us with invaluable insights and in-depth analysis of the key issues in the literature. Maria Hughes and John Vorhaus at the Learning and Skills Research Centre (LSRC) have been enthusiastic supporters of the project and have provided useful ideas and discussion points.

Members of our advisory board provided suggestions and feedback which enhanced and enriched the analysis of the findings. Last, but not least, Susan James contributed her knowledge of the theoretical literature on learning and her excellent data-searching skills.

As ever, any errors or omissions remain the sole responsibility of the authors.
The government has initiated a series of reforms in education to improve vocational learning for young people and adults and to make it more responsive to the needs of employers. Many scholars, education practitioners and employers supported the need for change in principle, as these groups had identified a number of problems with the current system.

The Learning and Skills Research Centre (LSRC) commissioned a study called *Modelling a vocational learning system for the 21st century* to help determine what an effective vocational learning system – one that enables access and coherent routes to successful learning – might look like. This report discusses activities conducted as part of Work Package 2, a literature review of vocational learning outcomes and processes in the UK. A systems analysis of vocational learning policy and a quantitative analysis of system outcomes are the topics of Work Packages 1 and 3, respectively. These additional investigations are covered in other reports (Work Package 1 – Stasz and Wright 2004; Work Package 3 – forthcoming).

The study was conducted within the University of Oxford's department of educational studies, through its affiliation with the ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE), and with RAND Corporation, an international non-profit research organisation.
The government has embarked on a series of policy initiatives that aim to improve the vocational learning system. These policies embrace a number of purposes, are directed at different age groups, and support delivery of vocational learning programmes in a broad variety of institutions. The vocational learning system is in flux, as recent changes to the institutional architecture and new policy initiatives are still being implemented. As implementation proceeds, it is important to understand the processes used in the current system and their outcomes, as this information can help to inform the design of vocational learning programmes as well as help to justify government expenditure.

A critical review of the literature was conducted to provide evidence on the effectiveness of the vocational learning system. This review addressed several questions.

- What are the outcomes of vocational learning programmes?
- What learning processes support positive outcomes?
- What are the implications for the design of vocational learning activities?
- What are the implications for vocational learning policy?

For the purposes of the study, we define vocational learning as any form of activity and experience leading to understandings or skills relevant to work. This conceptual definition covers a wide variety of experiences – for example, from courses taught in classrooms and workshops, preparatory experiences, and learning certificated on the basis of experiences within the workplace.

Operationally, however, the review focuses on vocational learning supported by public policy and funding, or on those activities clearly associated with public policy. The review also includes studies of non-formal learning at work. Although most of these activities are beyond the policy realm, the research on learning processes at work is informative and was of particular interest to the project sponsors (the LSRC).

The policy initiatives and literature reflect two broad types of activity: formal programmes of learning conducted at school, work or a combination of both; and non-formal on-the-job learning opportunities. The characteristics of specific programmes and activities included in the review are described in Sections 3–5.

These formal and non-formal vocational learning opportunities have different purposes and therefore expect to produce different types of outcome. Most activities have multiple purposes, although the range of outcomes aligned with these purposes is not always measured. Broadly speaking, outcomes refer to the products of vocational learning. For this review, we have organised outcomes into three broad types – affective processes, knowledge and skill acquisition, and progression. Table 1 illustrates these constructs with examples of indicators that apply to each.
As can be seen in Table 1, the types of indicator used to assess the various outcomes differ considerably. Outcomes like academic knowledge, technical skills and actual progression can be estimated through quantitative indicators such as qualifications, course taking, formal tests, or employment. Other outcomes of interest are more difficult to measure and their assessment may rely on self-reports that are difficult to validate or quantify. As discussed in Section 2, measurement limitations create problems for evaluators and for the search for evidence of effectiveness.

In addition to the outcomes of vocational learning, we are interested in identifying those processes that support learning. This review defines processes as the factors that support learning, such as teaching, curriculum, organisational culture, the nature of the work involved and so on.

Learning processes are discussed in the literature at three different levels. At the individual or ‘micro’ level, for example, the research considers the personal characteristics of the learner (eg motivation, ability, self-efficacy, prior experiences) and how these characteristics affect engagement and success in learning.

At the organisational or ‘meso’ level, theory and research describe how learning can be facilitated or constrained by such factors as the task at hand, the organisation of work, the social climate of the work environment or the social supports available (eg Lave and Wenger 1991; Eraut et al. 1998; Billett 2001a, 2001b.). This attention to the organisational level has been significantly influenced in recent years by socio-cultural theories of learning that view workplaces as learning environments (Billett 2001a, 2001b).

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Categories, constructs and indicators of outcomes</th>
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<tbody>
<tr>
<td><strong>Affect</strong></td>
<td>Enhanced enjoyment, self-esteem and confidence, motivation; improved behaviour; better attendance</td>
</tr>
<tr>
<td><strong>Knowledge and skill acquisition</strong></td>
<td></td>
</tr>
<tr>
<td>Academic knowledge:</td>
<td>Attainment of academic skills and/or content knowledge</td>
</tr>
<tr>
<td>Technical skills:</td>
<td>Acquisition of knowledge and/or skills related to a particular occupation</td>
</tr>
<tr>
<td>Social skills:</td>
<td>Acquisition and enhancement of interpersonal competence; interaction with adults and peers</td>
</tr>
<tr>
<td>‘Generic’ skills:</td>
<td>Acquisition of skills important across a range of occupations, such as teamwork, communications, problem solving, organisational skills</td>
</tr>
<tr>
<td><strong>Progression</strong></td>
<td></td>
</tr>
<tr>
<td>Actual progression:</td>
<td>Entering employment, training and/or full-time education</td>
</tr>
<tr>
<td>Perceptions related to progression:</td>
<td>Gaining a broad understanding of an occupation/industry or career options; career planning skills; understanding the relevance of school learning to work; being prepared for post-secondary education or training</td>
</tr>
</tbody>
</table>
The ‘macro’ level includes factors beyond the immediate learning environment, such as the characteristics of the organisation as a whole, professional bodies, national policies, and so on. These broad contextual factors are less often addressed in the literature, even though they can have a significant impact on vocational learning programmes. For example, the vocational qualifications framework and National Vocational Qualifications (NVQs), in particular, have had the effect of focusing on attainment of competencies, rather than on the learning processes for reaching them.

The remainder of this report is organised as follows. Section 2 presents the methodology for the review. Sections 3–5 separately address three sets of policies and practices: 14–16 year olds; post-16 formal programmes and activities; adult programmes and non-formal learning at work. This delineation reflects the main divisions in policy, which generally separates 14–16-year-old school learners from post-16 and adult learners. Within each category, the report describes the types of programme on offer and their purposes, and summarises the findings from the literature review with respect to outcomes (affective; knowledge and skills; progression) and processes. Section 6 presents the main themes on outcomes and processes that arise from the review, and discusses implications for policy and further research.
Section 2  Methodology

The list of studies for review was compiled through a bibliographic search and through consultation with researchers and practitioners in the field. Library catalogues, electronic databases and general-interest search engines and websites were searched using keyword searches. This process yielded nearly 8000 citations.

From these, we selected evaluations, case studies, reviews and descriptive studies of vocational learning programmes and non-formal learning at work. We focused on research conducted within the last 10 years, and on studies conducted in the UK. Also included were key studies and reviews from other countries, including Australia, Austria, Denmark, Germany, Norway and the US. This report primarily incorporates findings from around 100 UK-based studies and some selected research from abroad.

The literature has some important characteristics which limit the ability to draw definitive conclusions about outcomes and effective processes. First, many more studies have been conducted on formal programmes than on non-formal learning.

Second, descriptive studies outnumber evaluative studies. Descriptive studies typically report on the design and implementation of programmes, but pay less attention to measuring outcomes. Also, the studies tend to report on the mechanisms that support the learning process (i.e., training plans, learning objectives, visits to worksites), rather than the learning process itself. The evaluation studies, on the other hand, typically emphasise outcomes over processes. Thus, a study that incorporates processes, outcomes and the links between the two is atypical.

Third, even when outcomes are measured, the indicators used do not necessarily match policy objectives in a straightforward way. For example, a study may measure the percentage of students who attain a qualification, but the results of one study do not adequately inform policy-makers who seek evidence related to national targets. The narrow scope and uneven coverage of different programmes and initiatives also reduce the value of the results to inform policy concerns.

Most significantly, the bulk of the studies examined have severe methodological weaknesses. These weaknesses include inadequate measurement of the outcome of interest, lack of appropriate comparison groups, and an emphasis on measuring immediate outcomes only.

For these reasons, the conclusions drawn from the literature review should not be viewed as definitive evidence for assessing the outcomes or processes of vocational learning. Rather, this report provides a synthesis of the literature both within and across the different types of vocational learning opportunity in order to identify some general themes and lessons. Similarly, the implications drawn from this literature can only be tentative – except for the obvious implication that more high-quality research is sorely needed.

Sections 3–5 present findings from the literature review, beginning with programmes for 14–16 year olds.
Section 3 14–16 programmes and activities

Current policies in England and Wales emphasise the need to create a stronger vocational offer from the age of 14. The long history of developments in vocational and occupationally related learning for 14–16 year-olds in schools was effectively halted by the introduction of the National Curriculum in 1988. Following the introduction of GNVQs in 1993 and the more recent diversification of 14–16 provision (with, for example, the introduction of applied GCSEs, the Increased Flexibility Programme, and the statutory requirement for work-related learning from September 2004) there are again a range of vocational learning opportunities for this age group. This section reviews evidence about effective learning processes and outcomes of vocational learning for 14–16 year olds.
A variety of vocational learning opportunities are available for 14–16 year olds. The formal programmes and schemes lead to a qualification and include GCSEs in vocational subjects, General National Vocational Qualifications (GNVQs), and other certified activities or courses such as Young Enterprise programmes, OCR (Oxford, Cambridge and RSA examination board) National Certificates, qualifications from the Edexcel/BTEC framework, and ASDAN (Award Scheme Development and Accreditation Network) awards.

In addition to these programmes, young people can engage in vocational learning through the statutory requirement for work-related learning, disapplication of the National Curriculum or through participation in the Increased Flexibility Programme (IFP). From September 2004 all young people at Key Stage 4 will be required to meet the statutory requirement for work-related learning, and disapplication of the National Curriculum will be discontinued.

Some programmes combine qualifications and work-based learning (WBL); for example, when students work towards the ASDAN awards in their extended work-related learning programme (Nelson et al. 2001).

GCSEs in vocational subjects are currently available in 8 subject areas. They are based on a 3-unit award in which generally, the work of one unit is externally set and assessed and the work of the other two units is internally assessed and externally moderated. The basic qualification is a double award, i.e. a 6-unit GCSE equivalent to two traditional GCSEs. A 3-unit award is available in some subjects.

The GCSE in a vocational subject emphasises knowledge, skills and understanding in broad vocational areas and involves students in information gathering and working in teams. This qualification aims to support acquisition of practical skills for employment and is intended to be preparatory for further study or training; for example, via an NVQ, Modern Apprenticeship (MA), or higher education.

GNVQs are primarily delivered in further education (FE) institutions to post-16 students on programmes that normally last 1 or 2 years (QCA 2003a). However, 14–16 year olds may also pursue this qualification. Passes in Intermediate and Foundation GNVQs are equivalent to four GCSEs at grades A*-C and D–G respectively. These GNVQs are to be replaced by other vocational qualifications, such as the GCSEs in vocational subjects, over the next 3 years. Alternative vocational qualifications include Business and Technology Education Council (BTEC) and OCR certificates and diplomas at Levels 1 and 2.
Statutory regulation defines work-related learning as ‘planned activity that uses the context of work to develop knowledge, skills and understanding useful in work, including learning through the experience of work, learning about work and work practices, and learning the skills for work’ (QCA 2003b, 2).¹ This umbrella term describes a wide range of activities, which may be stand-alone or part of a formal course. There are nine elements of work-related learning in the framework which can be delivered through integration across the curriculum, through work-related learning supplemented by careers education and work experience, or through courses leading to vocational qualifications which may be in partnership with an FE college under the IFP. So learners may participate in a standard 2-week work-experience programme on employers’ premises or undertake extended work placement as part of the IFP or part of a vocational programme, such as GNVQ (Huddleston and Oh 2004).² These activities can range from intensive actual working experiences to one-off, short-term events such as attending a careers fair, visiting a worksite or hearing a presentation about work. The statutory requirement for work-related learning at Key stage 4 provides guidance on suggested minimum experience for young people.

¹ The literature also uses the term ‘work-based learning’ (WBL) to refer to activities that actually take place in a work setting.

² Currently, 98% of maintained schools are involved in some form of work-experience programme.
Both the GCSEs in vocational subjects and GNVQs are general courses intended to provide students with a broad understanding of employment. GCSEs in vocational subjects aim to introduce students to an industry sector; encourage their understanding of the key concepts and theories within the sector; and develop in them some specific skills related to the sector.

Foundation and Intermediate GNVQs are considered to be of equivalent standing to GCSEs and provide an accepted route to study at Level 2 and Level 3 respectively (DfES 1991). The work-related learning opportunities on offer have a wide variety of purposes, such as:

- attaining qualifications
- recognising, developing and applying skills for enterprise and employability
- using experience of work to extend understanding of work
- developing awareness of the extent and diversity of employment opportunities
- undertaking tasks and activities in work contexts
- learning about the way businesses operate
- improving motivation and attendance
- enhancing academic knowledge through applied learning.

A particularly important theme in the literature concerns the opportunities that workplaces afford for providing an especially enriching learning experience, and one that is significantly different from that provided in classrooms. Learning through working can embed the learning in an authentic activity and enables the application of knowledge to actual problems (Brown, Collins and Duguid 1989; Collins, Brown and Newman 1989). Learning at work may also take place within a rich social and physical environment that can challenge and motivate young people.

A single activity or offering may have multiple purposes, although these are not always fully evaluated.

However, one can question to what extent the purposes of the 14–16 programmes are truly vocational. For the most part, these activities are not intended to support learning of specific technical or craft-related skills that have value or application in the workplace. The aims of the learning activities are often quite general and vague (eg ‘learn about the way businesses operate’). Even if the government intends all young people to have the opportunity to study something vocationally related, in practice these programmes often seem to provide learning about work or alternative learning experiences for low attaining, disaffected or unmotivated students. (For example, Ofsted (2004b, 4) point out that in a ‘significant minority of schools’ GCSEs in vocational subjects are largely restricted to low attaining pupils.)
What do students learn in these programmes and work-related learning opportunities? The following sub-sections summarise findings related to affective, cognitive, and progression-related outcomes.

### Affective outcomes

The research generally relies on self-reports by participants or others (e.g., teachers, programme coordinators) to assess affective outcomes. Attendance data is sometimes used to note changes in student behaviour that suggest improvements in motivation. The studies reveal several important outcomes.

**Enhances students’ enjoyment, self-esteem and confidence**

Participants generally enjoyed their work-related learning opportunities and reported enhanced self-esteem and confidence (Nelson *et al.* 2001; Watson, Stuart and Ferguson 2002) and ‘respond enthusiastically’ to work-related aspects of their courses (Ofsted 1998, 6; Ofsted 2003a).

**Motivates learners to attend and improves their behaviour, but these outcomes do not always transfer to other classes**

Student attendance tends to be higher for work-related learning programmes (Nelson *et al.* 2001; Watson, Stuart and Ferguson 2002). Similarly, students who participated in work-related learning through disapplication of the National Curriculum appeared more motivated (Ofsted 2001). However, other studies found that these positive outcomes did not always apply to other classes (Hall and Raffo 2001; Ofsted 2001).

**Motivation improves for low-achieving students, but not for ‘disaffected’ or ‘disadvantaged’ students**

Nelson *et al.* (2001) found that students with one or more of the following characteristics were least likely to be motivated by extended work-related learning activities: a poor attendance record, behavioural difficulties, learning difficulties, apparent lack of motivation.

**Motivates some students to achieve and complete programme**

Work-related learning initiatives seem relatively successful in motivating students to complete and achieve in occupation-specific and vocational programmes (Griffith 2001; Watson, Stuart and Ferguson 2000).

Studies conducted outside the UK suggest that work-related learning helped to motivate students to apply themselves in school when the learning opportunities helped them to understand how school-based coursework can apply in the work setting (Stasz 1998). In evaluations of Austrian ‘practice firms’, a type of work simulation, teachers reported that participation enhanced student motivation, emotional satisfaction, attendance and willingness to cooperate (Gramlinger 1996, 2000). These results did not necessarily concur with students’ views, which were less positive (Straka *et al.* 2001).
Knowledge and skills

Weak evidence for enhanced academic achievement

Studies in the UK found only weak evidence that participation in work-related learning improved students’ academic attainment (Hall and Raffo 2001; Nelson et al. 2001; Ofsted 2001; Watson, Stuart and Ferguson 2000, 2002). However, most of these studies specifically looked at unmotivated or underachieving students with behavioural problems or learning difficulties or disabilities. These characteristics in students may have influenced the weak results.

A report by Ofsted (2003a), however, provides evidence of more positive results. About 60% of students who took part in extended work-related learning through disapplication of National Curriculum subjects attained better GCSE (or equivalent) grades than predicted from their Key stage 3 results. About 80% of these students continued into full-time learning in schools, FE colleges, or with other training providers.

Ofsted (2003b) also reported on attainment in GCSEs in vocational subjects and found that standards of achievement were generally satisfactory – and especially good in the Business and Applied ICT courses – in relation to prior attainment. Achievement in Science often exceeded that found in other academic GCSE courses. Achievement was generally unsatisfactory, however, in Leisure and Tourism and in Health and Social Care courses. A possible explanation for these results is that lower-achieving students are more likely to pursue these GCSE courses. A subsequent Ofsted report (2004b, p.3) indicates that attainment in GCSEs in vocational subjects is ‘satisfactory or better in three quarters of lessons and good or better in a third. It is, however, unsatisfactory in a quarter. This compares unfavourably with the average for all GCSE subjects at Key Stage 4.’

A work-related learning context appears to improve pupils’ understanding of the importance of key skills in the workplace and motivates them to achieve higher skill levels (Ofsted 1998).

Research conducted outside the UK has produced mixed results. A review on approaches to career and technical education programmes that integrated work-based learning (WBL) with school learning reported positive educational, attitudinal and employment outcomes. However, participation in school-to-work programmes had little impact on standardised test scores (Castellano, Stringfield and Stone 2003). A study of work-related learning programmes in Wisconsin found no relationship between academic learning and participation (Schug and Western 1999).

Limited opportunities for learning technical skills

The review identified few studies in the UK on the extent to which work-related learning helped 14–16-year-old students acquire specific craft or technical skills. This is not very surprising, since most initiatives are not intended to support learning of job-specific skills. One study, however, reported that students had acquired some specific computer-related skills as a result of their work experiences (Ahier et al. 2000).
A review of programmes in the US reported that work-related learning can provide students with opportunities to learn high-level technical skills on the job (Stasz 1998). A series of studies on the Austrian practice firms found that teachers perceived increases in students’ technical skills, methodical organisational skills and ICT skills (Gramlinger 1996, 2000).

**Helps to enhance general understanding of work and employment**

Work-related learning schemes in the UK are relatively successful at enhancing students’ knowledge of the workplace and employment, and they provide opportunities to gain a broad understanding of an occupation or industry (Hollenbeck 1996; Griffith 2001; Nelson et al. 2001; Watson, Stuart and Ferguson 2000, 2002). Studies of US programmes find similar results (Hamilton and Hamilton 1997; Stasz 1998). Nelson et al. (2001), for example, evaluated extended work-related learning programmes in 24 schools and found that staff and external partners reported an improvement in students’ general employability skills and confidence to plan for the future. Other studies indicated that students acquired a more informed view of behaviour and attitudes in the workplace (Watson, Stuart and Ferguson 2002) and of work responsibilities as a result of working directly with adults (Ofsted 1998).

**Helps to enhance personal and social skills**

The review also found some evidence that students who participated in work-related learning programmes acquired some personal and social skills (Ahier et al. 2000; Ofsted 2001; Watson, Stuart and Ferguson 2000, 2002). In particular, work-related learning can give young people the opportunity to make connections with non-family adults (Hall and Raffo 2001; Raffo 2003; Watson, Stuart and Ferguson 2000, 2002). Several studies in the US note similar results (Hamilton and Hamilton 1997; Stasz and Kaganoff 1997; Stasz and Brewer 1998; Hughes, Bailey and Mechur 2001).

**Less evidence for learning ‘generic’ skills**

Few studies have looked specifically at acquisition of generic workplace skills, such as team working, problem solving or communication. None of the UK evaluation studies looked specifically at skills of this sort. Studies in the US indicate that WBL can provide opportunities for students to gain problem-solving skills in unfamiliar or challenging situations (Stasz and Kaganoff 1997). If the work-related learning requires team working, then students are also likely to gain those skills (Stern et al. 1994; Hamilton and Hamilton 1997; Stasz and Kaganoff 1997). Participation in WBL can also provide some opportunity for learning oral communication skills, but fewer opportunities to develop writing skills (Stasz and Kaganoff 1997; Stasz and Brewer 1998; Smith and Wilson 2002).
Progression

**Participation enhances progression to employment**

UK students on work-related learning schemes who had no plans for training, employment or full-time education were more likely, after participation, to enter government-supported training and employment and less likely to be in full-time education (Watson, Stuart and Ferguson 2000, 2002). These programmes were directed at disaffected or low-achieving students. Similarly, US studies found that students who participate in work-related learning programmes have better employment outcomes (Stern *et al.* 1994; Orr 1996; Griffith 2001; Hughes, Bailey and Mechur 2001). Stern points out, however, that these short-term employment benefits may have a negative impact on future professional mobility; pursuit of higher education is more likely to enhance economic and employment chances in the long term.

**Enhances knowledge of the labour market and post-16 options**

Research finds that UK students report improved knowledge of post-16 options and of local labour market factors (Ahier *et al.* 2000; Watson, Stuart and Ferguson 2002); they also gained insights into career pathways and the qualifications needed for them (Ahier *et al.* 2000; Ofsted 2003a). The US literature further indicates that participation in WBL helps to formulate students’ career interests (Hollenbeck 1996; Hughes, Bailey and Mechur 2001).
This section discusses research on the learning processes that can support or enhance vocational learning. There is very little research on processes in the UK, so the discussion includes studies conducted elsewhere. In particular, several studies conducted in the US provide important information concerning the characteristics of 'successful' programmes and learning environments. Studies that emphasise process characteristics do not always measure outcomes in the ways discussed in Section 3.3. Thus the literature on processes is only suggestive with respect to how programmes and activities should be designed to enhance vocational learning.

**Programme characteristics that support vocational learning**

**Make curriculum and instruction vocationally relevant**

Learning appears to be enhanced when the curriculum and instruction is vocationally relevant. In inspections of the delivery of Key stage 4 programmes, Ofsted (2003a) reported that in good lessons in GCSE, GNVQ, NVQ and entry-level courses, teachers focused deliberately and regularly on applications of concepts and processes in the outside world, including the world of work. Further, good practice is demonstrated when teachers set tasks that are in appropriate vocational contexts, provide good workplace illustration and require pupils to organise and manage their own work.

For GCSEs in vocational subjects, vocational relevance was more successfully incorporated into classroom teaching where teachers had previous industrial experience or where other adults were used to enrich the classroom experience (Ofsted 2003b). Similarly, the teaching of key skills in GNVQ courses was more satisfactory when undertaken by experienced vocational teachers and supervised by a specialist team of key skills tutors.

**Prepare students for work-related and work-based learning activities**

Students need to be provided with information about the activities or placements in which they will engage, and be advised about what is expected of them. Although this seems self-evident, studies of work experience indicate that students are not always well informed (eg Hillage et al. 1996; Stasz and Kaganoff 1997).

Students need to take responsibility for their own learning in the workplace; for example, by asking questions, taking the initiative, and requesting more challenging work. Studies in the US suggest that school learning often does the opposite – it reinforces passive listening, working alone and dependence on the teacher. Thus, preparation would partly involve improvements in school-based teaching to produce active, engaged learners who can work alone and with others (Stasz and Kaganoff 1997).
Teachers need an understanding of work and learning in the worksite

In order to better prepare students for their work-related or work-based learning experience, school staff and placement advisers need to know more about the nature of the worksites. This information can also help them to evaluate the suitability of a work placement for young people.

Based on a series of studies of internships in the US, Hughes and Moore (1999) summarised workplace factors that either enhance or reduce the potential for learning (see Table 2). The significance of some of these factors has also been supported in many other studies.

The research indicates that the potential for learning is enhanced by the knowledge and skill required for the tasks (socio-cognitive demands). Higher socio-cognitive demands are more likely when work processes include team working or task flexibility (as opposed to rigid work roles). Repetitious, boring and low-skilled tasks will not engage students or expand their repertoire of skills (Hillage et al. 1996).

Learning is also enhanced when students face social demands at work, such as interaction with adults. Social networks and close relationships with adults enhance motivation. A study by Ofsted (2003b), for example, found that students taking GCSEs in vocational subjects responded particularly well when taught in adult environments. Social interaction within work-related learning activities may be even more important for young people who are disaffected (Hall and Raffo 2001; Raffo 2003).

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Workplace factors that help to determine the potential for learning by an intern</th>
<th>Source: Hughes and Moore (1999)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-cognitive demands</strong></td>
<td>More learning: Intern’s tasks require knowledge and skill</td>
<td>Less learning: Intern’s tasks are not challenging</td>
</tr>
<tr>
<td><strong>Social interaction demands</strong></td>
<td>Intern has heavy contact with others of varying statuses and roles</td>
<td>Intern has little contact with others</td>
</tr>
<tr>
<td><strong>Pragmatics</strong></td>
<td>The intern’s tasks are important to the organisation</td>
<td>Intern’s tasks are peripheral to the organisation</td>
</tr>
<tr>
<td><strong>Access characteristics</strong></td>
<td>Access to the knowledge of the workplace is available to the intern</td>
<td>Access to the knowledge of the workplace is unavailable</td>
</tr>
<tr>
<td><strong>Classification</strong></td>
<td>Less division of workplace knowledge</td>
<td>Workplace knowledge is highly segmented</td>
</tr>
<tr>
<td><strong>Frame</strong></td>
<td>Access to the knowledge of the workplace is not controlled</td>
<td>Access is highly controlled</td>
</tr>
<tr>
<td><strong>Social organisation</strong></td>
<td>Workplace roles are not highly segmented or hierarchical</td>
<td>Workplace roles are highly segmented and hierarchical</td>
</tr>
<tr>
<td><strong>Workplace culture</strong></td>
<td>Workers believe in collaboration and learning</td>
<td>Workers are status-oriented (and) competitive, and the intern is given low status</td>
</tr>
<tr>
<td><strong>Production process</strong></td>
<td>Less division of labour; work teams are used</td>
<td>High division of labour; Tayloristic</td>
</tr>
</tbody>
</table>
Learning is also enhanced when the intern's tasks are important to the organisation (pragmatics). The extent to which students are able to engage in challenging and authentic work activities and tasks partly depends on the production process and the social organisation of work. Students are more able to engage in different activities in workplaces with fewer divisions of labour and less hierarchical workplace roles. Learning is also enhanced if students have some discretion over their work and can make choices; for example, about the sequencing of work tasks (Stasz and Kaganoff 1997).

It is important for the student to have access to the knowledge needed to perform his or her job – knowledge which may reside in tools, documents, working practices, expert workers and so on. Learning is more difficult in organisations where knowledge is privileged to some individuals only, or access is highly controlled.

The social organisation of work and working culture can significantly affect learning. If the community of practice values and supports learning and welcomes the young person into the working group, then learning is enhanced. When students remain peripheral to that community, they lack the status required to access knowledge, have more difficulty finding the help they need to be successful (Stasz and Kaganoff 1997) and may feel isolated (Ahier et al. 2000).

**Effective instructional approaches and support**

In their research on internships, Hughes and Moore (1999) describe a variety of pedagogical strategies and tactics that worksite trainers, supervisors or mentors may employ. They may adopt a front-loaded strategy, for example, in which they give the learner off-task exposure to work-related knowledge before actual engagement in work tasks takes place. Instruction may occur 'just in time', as when the learner is engaged in a task, but needs some information, instruction or coaching to carry on. Teaching tactics may include modelling/demonstrating, lecturing, coaching or providing critical feedback. The success of the learning can depend to a great extent on the effectiveness of the strategies and tasks chosen; and of course, the teacher/trainer expertise (Stasz and Kaganoff 1997). Instructional approaches should embed learning in activity and make use of the social and physical context (Brown, Collins and Duguid 1989; Collins, Brown and Newman 1989).

Appropriate instruction should also include making students aware of performance expectations and providing feedback. If students are made aware of what is expected of them, and if they are provided with the appropriate guidance (feedback, mentoring, advice), it is more likely that they will be able to accomplish the tasks that are set (Stasz and Kaganoff 1997).

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4 See Hughes and Moore (1999) for a more extensive discussion of instructional strategies.

5 Collins, Brown and Newman (1989) have studied traditional work-based apprenticeships to make recommendations for improving school-based instruction so that it embeds learning in authentic activity and makes use of the social and physical context.
Enhance curriculum connections between school and work

There is little solid evidence that WBL enhances school learning and engagement. This may be partly due to insufficient connection between school-based and work-based learning. Ideally, work placements should provide opportunities for students to apply school learning in the work setting. This can be done in several ways; for example, by developing a plan with specific learning objectives that will build on academic and theoretical knowledge (Hughes, Moore and Bailey 1999).

However fruitful such connections may be for enhancing learning, research suggests that they are difficult to forge, even when supported by training plans or close communication between teachers and worksite trainers or mentors (Hershey et al. 1997; Stasz 1998). It may be due partly to the non-isomorphic relationship between school knowledge and the vocational knowledge that is used in the workplace (Young 2003). For example, in a programme designed specifically to integrate the school-based curriculum with WBL, it was still difficult to locate content knowledge within the workplace that corresponded in any clear way with the content knowledge encountered in the classroom. Students seldom performed school-like tasks (reading, writing, mathematics and science) in the workplace which implicitly drew on knowledge previously derived from school (Hughes, Moore and Bailey 1999).

Similarly, a study in the UK found that while students reported using mathematics on placements, their placement experience was rarely referred to in mathematics lessons (Hillage et al. 1996). Ofsted (2003b) reported that few courses in the schools visited capitalised on the learning that arose from work experience.

Another barrier to making these connections is the difficulty in transferring knowledge between different contexts (Lave and Wenger 1991). Although it is often assumed that transfer of knowledge is automatic, in fact it must often be explicitly mediated (Eraut 2001).

On the positive side, Hughes and Moore (1999) have identified some school-based pedagogies that can make a difference to what and how much a student gains in WBL. These include:

- journal writing – students keep a journal on the job, which is read by teachers and work supervisors and discussed with the student
- written training plans of what students are expected to do and learn on the job
- seminar classes at school that focus on sharing students’ WBL experiences
- final papers or presentations that require students to reflect on their WBL experiences.
Create organisational structures that link school and work components

It is often assumed that schools, colleges and workplaces have the organisational capacity and support to ensure the transfer of knowledge between sites. However, research indicates that staff members involved in work-experience placements did not know how the placements could be used to support the curricular objectives of the courses being studied (Ofsted 1998; Ahier et al. 2000).

The literature suggests several ways in which school and work connections can be enhanced. First, schools with a well-defined policy on work-related learning that includes specified aims and outcomes appear to provide a sound basis for vocational options (Ofsted 2003a). Work-related learning which is integral to the school's curriculum, rather than an add-on to it, is also important for promoting vocational learning. Thorough planning, a clear definition of responsibilities and effective communication are essential.

Research in the US (Stasz and Stern 1998) indicates that this planning should include attention to a number of factors, including: participation, content (including links between work-related learning and the curriculum), supervision, assessment, location, duration and compensation.

A strategic approach would help to avoid some recognised problems. First, WBL can be an additional burden to students when timetables have not been rearranged to accommodate their work-related learning. Students who missed ‘normal’ lessons to participate in work-related learning had to engage in ‘catching-up’ activities (Hall and Raffo 2001; Nelson et al. 2001).

Second, matching students to workplaces is crucial to achieving the desired outcomes. The social context of the workplace and the interests of the young people have to be taken into account (Stasz and Kaganoff 1997). UK students who were involved in choosing their placements and who had obtained their first choices were more satisfied with placements than those who had not (Hillage et al. 1996). In addition, information about students’ attainment and support needs should be articulated to providers before the start of the programme. This should be complemented by careers guidance and mentoring (Ofsted 2003a).

Third, a systematic approach to recruiting employers to participate in work-related learning schemes should be adopted. A systematic marketing approach that includes identifying the needs of students and of firms is preferable to the sometimes ad hoc approaches that are often adopted (Hillage et al. 1996). It is important to note that employers often have altruistic reasons for providing work-related learning and may be less concerned than educators that placements also support vocational learning (Ahier et al. 2000; CEI 2002). Alternatively, some employers may view the scheme as a source of cheap labour. Either way, a systematic recruitment process would help to clarify expectations on both sides and to evaluate the potential usefulness of the placement for the young person.
Fourth, some attention should be paid to the qualifications of mentors and workplace supervisors. Will they make effective teachers? Appropriate training may need to be provided, as well as effective means of monitoring their performance.

Finally, policy should specify ways to monitor performance that are understood by all parties. Teachers may visit work-placement sites to check on the general welfare of the student or on the student’s progress towards specified learning objectives (Hillage et al. 1996).
3.5 Conclusions

The literature on learning outcomes and processes for 14–16 year olds is incomplete. Studies have not adequately assessed the outcomes achieved by participants in formal vocational programmes that may include work-related learning options. On the basis of the evidence available, it appears that programmes and activities aimed at 14–16 year olds are more successful at enhancing affective outcomes than enhancing their knowledge and skills. Participation in vocational learning may enhance employment opportunities for some students.

More research is needed to fully understand the processes that can support vocational learning. Studies conducted on student internships in the US provide some useful empirical results that point to processes that enhance learning. Theoretical work also helps to inform the design of programmes and activities. However, many questions remain about the most effective ways to integrate school-based and work-based learning, to motivate young people who are ‘disaffected’ and to organise the relationship between the school and the workplace. This review provides some direction for policy-makers who currently plan to expand vocational learning options for 14–16 year olds, but much more research needs to be conducted to help in guiding the design and delivery of these new initiatives.
A wide range of formal vocational learning opportunities is available from the age of 16 (i.e. at the end of compulsory education), including programmes leading to VCEs, the Edexcel BTEC National Suite, and NVQ qualifications, among many others. However, some programmes have been evaluated far more than others. This section reviews the available evidence about effective learning processes and the outcomes of vocational learning for formal vocational learning opportunities available from the age of 16.
A wide range of formal vocational learning opportunities are available for the 16+ age group:

- qualifications within the National Qualifications Framework (NQF) or Scottish Qualifications Framework (SQF)
- other qualifications outside the NQF or SQF (eg RSA or City & Guilds, vendor qualifications offered by Microsoft and others)
- short training courses (not necessarily leading to a qualification)
- publicly funded work-based training: eg Modern Apprenticeships (Foundation MAs at Level 2, Advanced MAs at Level 3).

The many formal vocational learning opportunities which take place within higher education do not fall within the remit of this research project.

Formal vocational learning may or may not lead to qualifications. Some accredited courses are in the NQF [eg Advanced Vocational Certificates of Education (VCE), GNVQ, BTEC, NVQ/SVQ], and others are not (eg vendor qualifications). There is also a host of vocational courses that are not accredited (eg jewellery-making courses at FE colleges). There is practically no empirical research on learning outside the NQF or SQF, so courses outside these frameworks, although significant, are not covered in this review. The majority of evaluative studies look into publicly funded learning within the NQF or SQF. Most studies focus on Modern Apprenticeships, but there is also a small body of evaluations of NVQs and GNVQs, and one evaluation of BTEC courses and two of VCEs.

As part of the Curriculum 2000 reforms, both A-levels and Advanced GNVQs were redesigned so that they aligned more closely to each other – to make delivery more flexible and to encourage greater consistency of standards. Advanced GNVQs were renamed Advanced Vocational Certificates of Education (VCEs). They consist of 12-unit, 6-unit or 3-unit qualifications, as do A-levels and AS levels. All units in VCEs are intended to be at A-level standard. The formal requirement to undertake key skills as part of the GNVQ awards was removed so that they could be achieved through a separate Key Skills Qualification. However, following the first year of implementation of Curriculum 2000, the grouped Key Skills Qualification was abandoned in favour of separate certification for each key skill. The aim of designing AS/A2 levels and VCEs in blocks of a similar size was to enable a wider range of students to mix and match general and general vocational qualifications within their programmes of study (Savory, Hodgson and Spours 2003).

GNVQs are currently available at Level 2 (Intermediate) and Level 1 (Foundation). However, these two awards are scheduled for withdrawal between summer 2005 and summer 2007, to be replaced mainly by BTEC diplomas and certificates, OCR Nationals (at Levels 1 and 2), and vocational or applied GCSEs (at Level 2).
BTEC, part of the Edexcel awarding body, offers vocational qualifications at four levels of the NQF.

- **Level 4**
  Edexcel BTEC Higher National Diplomas and Certificates.

- **Level 3**
  Edexcel BTEC National Diplomas, Certificates and Awards focus on an occupational area.

- **Level 2**
  BTEC First Diplomas are intended to provide the initial knowledge and understanding for students wishing to work or undertake further study at Level 3.

- **Level 1**
  BTEC Introductory Certificates and Diplomas.

New BTEC National qualifications were introduced in September 2002: the BTEC National Award (6 units and roughly equivalent to one GCE A-level/VCE); the BTEC National Certificate (12 units, broadly equivalent to two GCE A-levels/the VCE Double Award, and may be combined with these qualifications); and the BTEC National Diploma (18 units and broadly equivalent to three GCE A-levels/VCEs). With BTEC national qualifications there are various options for full- and part-time study – typically more diverse than the options for studying GNVQ or VCE – in a range of occupational subject areas.

The main difference between VCEs and BTEC awards relates to assessment practices and the philosophy underpinning those assessment practices. In the BTEC system, external assessment instruments take two forms: either a final major project or an integrated vocational assignment. These are set by Edexcel, marked internally and moderated externally by an Edexcel external verifier. A VCE, on the other hand, is assessed through work set by college or school staff (coursework) and through tests set by the awarding body. The VCE is, therefore, more like a GCE A-level in its assessment practices.

National Vocational Qualifications (NVQs) are work-related, competence-based qualifications. They are based on national occupational standards which cover all the main aspects of an occupation, including current best practice, the ability to adapt to future requirements, and the knowledge and understanding that underpin competent performance.

NVQs can be taken by full-time employees or by school and college students with a work placement or part-time job that enables them to develop the appropriate skills. There are no age limits and no special entry requirements.
An NVQ certificates a person’s competence in a particular occupational role. Candidates produce a portfolio of evidence to prove they have developed the necessary level of competence to meet the NVQ standards. Specially trained assessors assess the elements of competence, organised into the units that make up the award, when the candidates are ready. Assessment of competence is normally through on-the-job observation of performance and questioning of the candidate to assess underpinning knowledge and understanding.

The Key Skills Qualification assessed achievement in Communication, Application of Number and Information Technology (IT) at either Levels 1, 2 or 3. Each key skill is now separately assessed and certificated, and can be taken as a stand-alone qualification, or as part of other vocational programmes, such as VCEs and Modern Apprenticeships.

The Modern Apprenticeship (MA), introduced in 1994, is a government-supported WBL programme. 16–24 year olds are currently eligible, but an extension of the programme to individuals aged 25 and above was announced in the Skills Strategy (DfES et al. 2003). The programme was first introduced at Level 3 only; but in 2001, was split into two phases – the Foundation Modern Apprenticeship (FMA) leading to NVQ Level 2, and the Advanced Modern Apprenticeship (AMA) leading to NVQ Level 3.9 Apprentices must be employed and will be withdrawn from the programme after 3 weeks of unemployment. For the majority, learning takes place both in the workplace and off-site through day or block release at an FE college or with a private training provider, although some apprentices receive no off-the-job training.

The latest Learning and Skills Council (LSC) information identifies over 90 MA frameworks. These are designed by sectoral bodies (previously National Training Organisations (NTOs), now in the process of becoming Sector Skills Councils (SSCs)) in order to ensure their relevance and appropriateness for employment in the sector. An NVQ at Level 2 (for FMA) or Level 3 (for AMA) and key skills (Communication, Application of Number, IT) at the appropriate level are mandatory components of all MA frameworks. Some frameworks also include additional occupationally relevant qualifications, called technical certificates, such as BTEC National or Higher National Certificates and Diplomas. So an MA framework can incorporate assessment of occupational competence, specific occupational knowledge, more ‘general’ knowledge and skills, and sometimes ‘theoretical’ but occupationally relevant knowledge. However, it is important to note that what constitutes an MA can vary significantly by framework (and by employer) – in terms of the constituent qualifications, the nature of the competences assessed in the NVQ element, and the amount of formal training.
The purposes of post-16 vocational programmes are generally more labour market-oriented than for the 14–16 age group:

- achievement of vocational qualifications
- labour market entry and progression
- progression to further and higher education
- social inclusion.

It is important to note that two policy agendas – the upskilling agenda and the social inclusion agenda – potentially interact (and can be conflated) for post-16 learners. Aims associated with social inclusion are still important for this age group, even if they are less explicit in government policy than for programmes aimed at 14–16 year olds. If government-funded vocational learning opportunities are viewed as a way of dealing with the disadvantaged and disaffected rather than a high-quality route to gaining technical or managerial-level skills, this could have negative implications for their status.
MAs are distinctive in that learning typically takes place both in the workplace and off the job at a private training provider or FE college. Consequently, pedagogical outcomes and processes are affected by a range of factors related to the setting: at the level of the individual apprentice, who brings his/her own knowledge, motivation and experience of learning and employment; at the level of the organisation; at the ‘macro’ level of the sector or economy as a whole. Learning outcomes and processes for largely school-/college-based courses such as VCEs, GNVQs or BTEC awards, on the other hand, are not affected by workplace-related factors to the same degree.

**Affective outcomes**

**Modern Apprenticeship**

Survey and interview evidence suggests that trainees who did not enjoy school can be motivated by and enjoy the ‘hands-on’ approach of learning in the workplace setting (Ernst and Young 1995; Unwin and Wellington 1995; Coleman and Williams 1998; Everett, Tu and Mori 1999; Wiseman, Roe and Boothby 2003). In addition, reports from apprentices and employers suggest that learning on the MA programme can enhance both commitment and motivation levels in the workplace and the apprentices’ self-esteem (Hogarth and Hasluck 2003; Wiseman, Roe and Boothby 2003). The lack of longitudinal data makes it hard to determine whether these qualities in turn influence employment and career progression.

Interviews with providers suggest that many perceive apprentices as disaffected and believe that too much formal teaching and assessment will make them drop out from the programme (Hughes 2002; Wiseman, Roe and Boothby 2003). On the other hand, there is self-report evidence which suggests that many apprentices are vocationally motivated and value the apprenticeship as a positive step on their chosen career path (Unwin and Wellington 1995, 2001; Saunders et al. 1997).  

**Other programmes**

There is evidence that for some Intermediate GNVQ students, general affective outcomes are more significant than knowledge and skills. Intermediate GNVQs may present an opportunity to engage in learning for those who might otherwise have been lost to the education system, rather than an opportunity for vocational training. Huddleston (2002, 13) argues, on the basis of case studies of Intermediate GNVQ students taking Business and Leisure & Tourism courses in four FE colleges, that ‘these courses were more about re-motivation and re-orientation in a general sense than about vocational training.’ Students interviewed, many of whom were poor academic achievers at school, saw an Intermediate GNVQ at an FE college as a new start, and a number planned to undertake further education and training (Huddleston 2002).
Evidence on affective outcomes for students pursuing Level 3 ‘general vocational’ qualifications is equivocal. VCE students surveyed by Savory, Hodgson and Spours (2003) felt more in control of their learning than their counterparts on AS-level programmes and appreciated the focus on coursework and applied and resource-based learning. On the other hand, participant observation data from Advanced GNVQ students in an inner-city comprehensive school suggests that these students resisted any additional burden of responsibility for learning (Bates 1998). In addition, a number of evaluations suggest – mostly on the basis of third-party report and self-report – that the cumbersome and time-consuming assessment regimes for NVQ, GNVQ, VCE and key skills can alienate and demotivate learners (FEDA 1998; Ofsted, FEFC and TSC 2000; Hodgson and Spours 2003; Ofsted 2004a).

Knowledge and skills

Modern Apprenticeships

There is very little clear-cut evidence about knowledge and skills outcomes for Modern Apprentices on the basis of empirical evaluations. Many government-commissioned studies do not directly address the issue of learning. The DfEE/DfES has been more interested in research questions relating to issues of good and bad implementation practice and how to attract more apprentices and employers. Some information on knowledge and skills outcomes can be found in these evaluations, but it is secondary to the main thrust of the studies. Also, there is very little research, even in non-commissioned evaluations, which addresses in any detail the issue of what type of knowledge and skills Modern Apprentices acquire.

Using qualification attainment as a proxy for knowledge and skills gained is problematic in general, and particularly so for MAs. A major issue is the poor quality of the national-level administrative data available. We know from the LSC data whether an individual completes the framework as a whole, or completes NVQ components; but we do not know which other constituent qualifications have been completed, if any. Hence, the data available limits what is known about knowledge and skills acquisition.

Also, studies suggest that the reasons for non-attainment are complex. They may relate to employment relations in the sector and the particular workplace (Winterbotham, Adams and Lorentzen-White 2000; Hughes 2002; Canning 2003); or to personal histories of disaffection and non-compliance (Payne 2001), rather than to the development or otherwise of knowledge and skills per se. Therefore, we cannot assume that non-attainment of qualifications means that the programme did not adequately support learning.

It could be that qualifications in themselves are an inadequate measure of knowledge and skills outcomes, as they may miss much of the knowledge and skill acquisition that takes place. These outcomes and the learning processes involved are particularly complex in a programme such as the MA, in which learning typically takes place in both the FE college or private training provider and the workplace.

11 The DfEE/DfES was responsible for Modern Apprenticeship data until 2002. It counted attainment of the NVQ rather than completion of the entire framework, but did not count completion of other constituent qualifications. The LSC now counts both framework completion and NVQ completion.
We have some (limited) alternative evidence relating to knowledge and skills outcomes. Survey evidence suggests that a high proportion of employers and apprentices value the MA as a way of gaining occupationally relevant knowledge and skills, and knowledge about the world of work (Coleman and Williams 1998; Kodz et al. 2000; SECRU 2001; Wiseman, Roe and Boothby 2003). This implies that relevant skills are learned even where the apprentice does not complete the MA. In addition, Unwin and Wellington's (1995) interviews with apprentices suggest that the workplace context can facilitate mathematical knowledge acquisition for people who disliked the formalised classroom delivery at school.

Very few studies investigate in any detail what the apprentice learns. Evidence from these few indicates that, beyond what is covered under the MA framework, the apprentice will always acquire new knowledge and skills specific to the particular employer and the particular job role. In addition to the occupationally specific knowledge embedded in the NVQ (which is nevertheless applicable across different workplaces), apprentices acquire knowledge and skills specific to their workplace and the particular work tasks in which they engage (James 2004). Also, the cross-sectional study by Tolley et al. (2003) of engineering apprentices suggests that underpinning knowledge gained through part-time study contributes to the apprentices’ ability to transfer what has been learned in one context to another.

Evidence on employers’ rates of return indicates that apprentices come to make productive contributions (Hogarth and Hasluck 2003), which suggests they have picked up, as a minimum, the imitative knowledge and skills required to perform their particular job. However, the length of time it takes the apprentice to make a productive contribution varies significantly by sector. For AMAs in some sectors, such as engineering, this may take 2 or 3 years. On the other hand, highly productive contributions from the start for FMAs in retail (and to a lesser extent in business administration) suggest that these programmes essentially certify skills that the apprentice already possesses rather than significantly enhancing the skills base of the industry (Hogarth and Hasluck 2003).

The received wisdom for a number of years has been that the main reason for non-completion of MA frameworks lay with key skills. Anecdotal evidence from trainees in Wales suggests that not all trainees receive their mandatory key skills training and assessment (Wiseman, Roe and Boothby 2003). Anecdotal evidence from training providers also suggests that employers and employees can actively resist formal off-the-job delivery and assessment of key skills through non-attendance (Hughes 2002; Wiseman, Roe and Boothby 2003). In the latest administrative data from the LSC, we are able to disaggregate key skills attainment for the first time. This data suggests that non-completion of the key skills element may not be as significant a contributory factor to non-completion of the whole framework as had previously been assumed.
Other programmes

Evidence on knowledge and skills outcomes from evaluations of Scottish Vocational Qualifications (SVQs) or NVQs is relevant both for MAs and for those taking S/NVQs outside the MA framework. Evaluations of NVQs have investigated, in more detail than many evaluations of MAs as a whole, the knowledge and skills content that can be acquired. The main point which emerges from evaluations is that the competence-based approach of the NVQ encourages only 'surface learning'. Case studies suggest that learners on NVQs can develop procedural knowledge (the ability to do particular tasks). However, in practice, the focus of NVQs on the immediate requirements of the worker's situation does not seem to promote the development of conceptual knowledge (which is deemed essential for the transfer of competence from one context to another) and of analytical and critical skills (Canning 1999; Tolley et al. 2003).

Tolley et al. (2003), in a study which focuses on the actual delivery of NVQs, found that candidates, trainers and employers saw NVQ Level 2 as a means of developing sufficient capacity to enter the workplace. However, the nature of the knowledge and skills to be acquired was contested: the authors identified a tension between sector requirements and the needs of the individual employer.

Intermediate-level GNVQ students report that the programme is more about re-engagement with learning and re-orientation, often after negative experiences at school, than about gaining vocational knowledge (Huddleston 2002). The Advanced GNVQ, and even more so the VCE, have been criticised for not offering enough vocationally relevant teaching, curriculum and experience (Hodgson and Spours 2003; Savory, Hodgson and Spours 2003; Ofsted 2004a). In addition, evidence from interviews with university admission tutors suggests that although Advanced GNVQ students were able to meet deadlines and recognise the importance of coursework, the competence-based approach of the GNVQ did not adequately teach critical thinking and analytical skills. In this respect, entrants with GNVQs could struggle with the experience of higher education by comparison with their A-level counterparts (Bloomer 1998; Williams 2000).

Progression

Modern Apprenticeships

As there are no longitudinal studies of the MA scheme, we can only evaluate short-term progression outcomes – what the apprentice does immediately after completing or leaving the apprenticeship. This is also true for GNVQ and S/NVQ students. Completion rates are generally low. For nine of the 10 numerically largest apprenticeship frameworks, less than 50% of leavers gained either NVQ Level 3 or completed the entire framework. Within this overall picture, completion rates vary significantly by framework. To generalise, completion rates tend to be higher for frameworks where the sector has a tradition of apprenticeship and lower where there is no such earlier tradition.

12 This finding is corroborated by Canning's (1999) findings from interviews with Level 4 and Level 5 NVQ students: the NVQ focused on procedural knowledge (doing and performing tasks), but neglected conceptual knowledge (which would promote an understanding of why tasks are necessary, thinking about – and possibly changing – the nature and conduct of professional practice).

13 Administrative data on AMAs was collected by the LSC to July 2003.
Employment progression patterns vary within and between sectors. Clear pathways for career progression on completion of the MA exist in some sectors, particularly those with a tradition of apprenticeship. In other sectors, these employment pathways appear to be weak or non-existent. There is also significant variation between employers within sectors. Progression opportunities tend to be better with large employers with clear internal career pathways, particularly those large employers where the MA is embedded in these structures and an integral part of the company’s human resource development (HRD) policy. Employees in small companies are more likely to progress in their career by moving to another employer (Kodz et al. 2000).

In some sectors, employment progression appears to be unrelated to completion of the MA. For instance, employers in the retail sector appeared to place little importance on framework completion, and many non-completers stayed with their old employer (Winterbotham, Adams and Lorentzen-White 2000; Anderson and Metcalf 2003; Hogarth and Hasluck 2003). We can surmise that employers who retain, or promote or take on employees who start, but do not complete, the apprenticeship framework do not believe that completion in itself is an important outcome. Survey evidence from both apprentices and employers also suggests that employers value the apprentices’ work experience more than the qualifications gained (Unwin and Wellington 1995; Kodz et al. 2000), a view supported by McIntosh (2004).

The evidence suggests that actual progression to full-time higher education for MAs is very limited. Administrative data held by the Universities & Colleges Admissions Service (UCAS) on applicants’ prior educational attainment and background does not record completion of the AMA as an entry code, so it is impossible to tell how many ex-AMAs are applying to and being accepted into higher education on the strength of their MA attainments (Unwin et al. 2004).

Survey evidence suggests that a number of apprentices – possibly as many as a quarter to a third – intend to go on to higher education (Coleman and Williams 1998), but DfES data suggests that less than 1% of apprentices actually progress to full-time higher education. (Fuller and Unwin 2003a). However, within this overall pattern, progression varies substantially by sector and within sectors: where there are clear progression pathways, designed by and supported by employers, the proportion of MAs progressing to higher education can be much higher (Saunders et al. 1997; Huddleston 1998; Kodz et al. 2000).15

Another related issue is that individuals may decide that full-time higher education will not aid, and may even hinder, employment progression in their chosen sector (Unwin and Wellington 1995, 2001). Survey evidence suggests substantial differences by sector in the intentions of apprentices regarding progression to higher education: many more in engineering intend to go on to higher education than in hospitality, where intentions to participate in further work-based training are more common (Kodz et al. 2000). Indeed, many apprentices surveyed by Saunders et al. (1997) intended to take higher-level NVQs in the workplace, rather than the full-time HE route. So, higher education may not be an appropriate choice for many AMA graduates who are thinking about future career progression.

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14 The actual figure may be higher as this data does not capture apprentices who go on to study for HNDs part-time.

15 Kodz et al. (2000) identify progression pathways into higher education in construction and motor repair.
Other programmes

Attrition rates for students staying on in full-time education to gain a vocational qualification are high (Payne 2003b). Nevertheless, there is some evidence that the Intermediate GNVQ can be an opportunity to re-engage with education for people who might otherwise be lost to further education and training. Case-study evidence for Intermediate GNVQ students suggests that although there is a high attrition rate, students who stay the course can achieve a foundation for further progression in post-compulsory education through this route (Rudd and Steedman 1997; Huddleston 2002). Indeed, many students on this programme express an intention to engage in further education, although tutors interviewed expressed concern about the students’ ability to cope with higher-level courses (FEDA/IoE and Nuffield 1997; Huddleston 2002).

Likewise, many Advanced GNVQ students cited further study or training as their dominant ambition (Lubbock 1993; FEDA/IoE and Nuffield 1997). Actual progression to higher education is hard to measure as the limitations of the administrative data make it very difficult to track progression over several years. However, data from the Youth Cohort Study indicates that very few of those working towards Level 3 vocational qualifications in full-time education had gone on to work for Level 4 qualifications within 2 years (Payne 2003b).

Interviews with HE admissions tutors suggest that for certain vocational subjects (hotel and catering management and retail management), the Advanced GNVQ has good ‘exchange value’: students who gained an Advanced GNVQ in these subject areas were able to ‘buy’ their way into higher education without difficulty. The majority of tutors did not see GNVQ entrants as intellectually less able. However, these tutors expressed doubts as to the ‘use value’ of the GNVQ as preparation for higher education; they believed that the GNVQ did not teach the analytical and critical thinking skills required in higher education. There is an issue of finding a balance between teaching analytical and critical thinking skills and retaining the pedagogical methods that learners appreciate, especially those learners who would not want to do A-levels (Williams 2000).

The evaluations examined suggest that the GNVQ – at all levels, but especially at intermediate – has only limited utility in terms of labour market progression. FEDA/IoE and Nuffield (1997) found that the majority of former students worked in areas unrelated to their GNVQ. In addition, the lack of labour market recognition accorded to intermediate-level vocational qualifications in general may be a key reason for the high drop-out rate among Intermediate GNVQ students in a London FE college (Rudd and Steedman 1997). Those who left the course early decided that their opportunities for employment progression would not be furthered by completing the course (McIntosh 2004).
Empirical evidence on learning processes for MAs comes mostly from case studies within a company or a sector and is supplemented by findings from surveys. From this evidence, the key factors listed below appear to support learning for the apprentice. These factors range from issues of framework design and implementation, through provider capacity and sector institutional structures, to features of the individual workplace.

### Programme characteristics that support vocational learning

We have some empirical case-study evidence on factors which support learning for GNVQ, VCE, key skills and BTEC students. This evidence focuses more on pedagogical strategies used in the classroom, but overlaps with the factors identified for MAs.

### Frameworks should include both knowledge and competence-based qualifications

Engineering frameworks – in which knowledge-based traditional occupational qualifications are included alongside the mandatory NVQs and key skills elements – are often held up as an example of good practice. Fuller and Unwin (2003b), for example, argue that knowledge-based content is necessary for expansive, as opposed to purely imitative, learning to take place.\(^\text{17}\)

Integrate key skills with other components of the MA framework, or with other courses studied

Although we have very little empirical evidence about knowledge and skills outcomes with regard to key skills (see Gleeson and Keep 2004; Hayward and Fernandez 2004), there is some evidence about effective learning processes in this area. Evidence on their perceived relevance and appropriateness is mixed. On the basis of interviews and surveys, employers and apprentices seem to like the key skills element (Everett, Tu and Mori 1999; SECRU 2001), but do not always see it as relevant. Interviews with training providers, however, suggest that employers and apprentices are resistant to key skills and fail to see their relevance (Everett, Tu and Mori 1999; TSC 2000; SECRU 2001). Employers in some sectors see Application of Number and IT as irrelevant to their needs (Kodz et al. 2000; Anderson and Metcalf 2003). In-depth interviews with apprentices by Unwin and Wellington (2001) suggest that young people are ambivalent as to the vocational significance of these key skills.

The main problems seem to be with the implementation of the key skills element, rather than their inclusion per se. Studies suggest that while delivery of key skills seems to work best when they are integrated into projects or tasks relevant to young people’s work (Kodz et al. 2000) and with other elements of the framework (Everett, Tu and Mori 1999; SECRU 2001),\(^\text{18}\) they are often taught as a ‘bolt-on’ element at the end of the course (TSC 2000). Another problem is duplication between elements of the NVQ and key skills components, and between elements of the key skills and what the apprentice has already learned at school (Kodz et al. 2000; Unwin and Wellington 2001). This suggests that different elements of the framework need to be carefully coordinated – which in turn requires a degree of flexibility in government rules on framework requirements.\(^\text{19}\)

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\(^\text{17}\) Expansive learning as defined by Engestrom (2001) should enable the learner to make changes and plan for the future. Imitative learning would only enable the learner to perform in his/her current role.

\(^\text{18}\) Everett, Tu and Mori (1999) cited the incorporation of key skills into regular assessment of NVQs, and an assessor helping the trainee to recognise opportunities for key skills development in the workplace as examples of good practice adopted by some sectors.

\(^\text{19}\) Evaluations of the Key Skills Qualification outside the Modern Apprenticeship programme suggest similar problems of repetition and lack of integration with other areas of learning (Ofsted, FEFC and TSC 2000; Hodgson and Spours 2003).
Evidence from the Ofsted key skills pilot evaluation (Ofsted, FEFC and TSC 2000) indicates that particular teaching strategies can be effective in the classroom context. Effective strategies linked key skills with A-level or GNVQ courses taken at the same time, filled gaps in what was covered by the A-level or GNVQ course, and developed features of A-level and GNVQ courses in order to meet the requirements of the Key Skills Qualification. Indeed, where key skills were implemented as a stand-alone qualification – as part of Curriculum 2000 – they could be heavily resisted by teachers, pupils and parents (Hodgson and Spours 2003). On the other hand, there is also evidence that the teaching of key skills can be problematic. They have been identified as the poorest quality area of teaching for the VCE in schools, and many work-based providers are unclear as to what key skills are or confuse them with basic skills (Ofsted, FEFC and TSC 2000).

Effective assessment at point of entry

On the basis of inspection of providers and employer questionnaires, the Trading Standards Council (TSC) argues (2000) that a good quality assessment of prior knowledge and skills, aptitude, and basic and key skills facilitates the design of an effective individual training plan and the provision of appropriate support for additional learning needs. Where initial assessment is inappropriate or offered too late, providers may have difficulties in meeting the individual apprentice’s specific requirements. This is corroborated by Hughes and Turner’s argument [2002 – a ‘digest of findings’ from the work of FEDA and the Quality and Performance Improvement Dissemination Unit (QPID)]20 that for a variety of programmes and qualifications, effective initial assessment can support retention and achievement.

Ensure providers’ capacity for delivery

One significant issue, which has been almost completely ignored in government policy thinking, is the capacity of providers to teach the programme. Lack of capacity emerges in interviews with work-based training providers as a significant issue with regard to the MA programme. Providers equipped for previous government-supported training (GST) programmes which focused on workplace assessment lacked the institutional infrastructure or the appropriately trained staff to support the formal teaching requirements of the MA (Hughes 2002). Lack of provider capacity has also been identified as a problem in a case study involving two FE colleges: there were not enough college staff who were trained as workplace assessors (Huddleston 1998).

Lack of capacity on the part of providers can result in a gap between the teaching and learning experience envisaged by designers and what happens in practice. For instance, Savory, Hodgson and Spours (2003) found that a lack of specialist vocational experience meant that teachers were unable to make their VCE teaching vocationally relevant. Incorporating work-related learning activities into the VCE has been suggested as a way of making the programme more vocationally relevant (Savory, Hodgson and Spours 2003; Ofsted 2004a). However, as with work-related learning for 14–16 year olds, the capacity of schools to fund this adequately is doubtful.

20 Literature reviewed includes good practice guides for practitioners, responses to government consultations, policy discussion papers, summaries of college-based research projects and reports of research projects carried out or commissioned by the Further Education Development Agency (FEDA) or the Quality and Performance Improvement Dissemination Unit (QPID).
Capacity shortfalls also mean that the intended pedagogical approach of the BTEC courses – of integrating what is learned in college with the student's workplace experience – is not always realised in practice. For instance, the use of workplace assignments to achieve this integration is constrained by factors such as staff inexperience, the time required to devise individual assignments, and problems meeting the needs of students disadvantaged by limited resources at work, by unemployment, or by repetitive jobs. Also, delivery of the intended learner-oriented approach in BTEC provision can be constrained when teachers and students are used to didactic and traditional teaching approaches, or perceive that alternative approaches take more time and are not time- or cost-effective (FEU 1990).

**Tradition of apprenticeship in sector**

There is some evidence from evaluations that the institutional structures, progression routes and a workplace culture which supports this type of pedagogy are more likely to be in place in sectors with a tradition of apprenticeship (Ernst and Young 1995; Gospel and Fuller 1998). Companies in a sector where there is a tradition of apprenticeship are more likely to have ‘teaching capacity’ – that is, staff who are able and willing to take responsibility for the development of the apprentice (Gospel and Fuller 1998; Tolley et al. 2003; Wiseman, Roe and Boothby 2003). With the outsourcing of HRD functions by many companies, this capacity may diminish.

A related point is that apprenticeship pedagogy may be appropriate in some sectors, but not in others. This may be connected with the availability or otherwise of learning opportunities. An evaluation of MAs in Scotland, for example, suggests that the programme would not work in some sectors because jobs at the appropriate level, and/or those which offer the appropriate range and breadth of experience, are not available (SECRU 2001). Fuller and Unwin (2003a) also argue that the apprenticeship style of teaching and learning is most effective where there are specific skill sets, and where the skills/knowledge attained are closely associated with defined job categories. Some MA frameworks, such as business administration, require more general or generic knowledge and skills rather than specific skills tied to particular jobs. It is suggested that general classroom-based learning may be more appropriate in these situations.
Organisational culture that supports learning

Building on theory and empirical work in four private sector companies in the steel industry, Fuller and Unwin (2003b) have developed a framework of ‘expansive’ and ‘restrictive' workplace learning environments which identifies factors that may facilitate or inhibit learning for the apprentice (‘learning’ being both skill and identity formation). It is clear from this study that even within a sector with strong institutional supports for apprenticeship learning, workplaces differ in the support of learning. In some workplaces, the apprentice is valued as a learner as well as a worker, is included in a shared tradition of workforce development, and has opportunities to gain knowledge through communication with peers and more senior staff (Fuller and Unwin 2003b; Tolley et al. 2003). A supportive framework is more likely in workplaces where apprenticeship is an embedded part of the workforce development that is linked to the company’s business objectives. Support for learning may be limited, however, where it comes into conflict with business goals.

Opportunities for breadth of workplace experience

A second significant factor, which emerges from Fuller and Unwin's framework (2003b) and is corroborated in other studies, is the importance of opportunities for an appropriate breadth of workplace experience. Features of job design, such as opportunities for job rotation and learning from other staff, contribute to breadth or narrowness of experience. Some workplaces can only offer a narrow range of experience because they undertake only a narrow range of tasks. Workplaces of this sort may find it difficult to provide the breadth of experience needed to meet the NVQ requirements of the relevant apprenticeship framework (SECNU 2001). It is possible that lack of breadth of experience has an impact on apprentices’ ability to complete the framework. However, since national administrative data is not disaggregated by employer or job role, it is impossible to link these environmental features to qualification attainment by apprentices in individual workplaces.

Good communication between workplace and college-based components to link on- and off-the-job elements

The evidence strongly suggests that integration of the on- and off-the-job components of the apprenticeship is vital for effective learning. However, communication between the workplace and the training provider often appears to be poor (Ofsted, FEFC and TSC 2000). Thus, what is learned off-site may not be applied on the job. As the transfer of knowledge between the college and the workplace and vice versa is not automatic, communication between employers and training providers is essential. An important facilitating factor is an adult in the workplace who takes on a mentoring role and assists the apprentice in mediating (ie assimilating and transferring) what has been learned off-site (Unwin and Wellington 2001; Tolley et al. 2003; James 2004). Communication between these parties also affects the relevance of the off-the-job elements: it can help to ensure relevant and up-to-date college teaching and the identification of learning opportunities in the workplace. Cooperation between college and company staff in assignment design can enhance learning opportunities both in and outside the workplace.
MAs can be effective when young people are occupationally committed and effective support structures are in place both within the sector as a whole and the particular workplace. There are some sectors where these conditions will not be met and an alternative mode of learning might be more appropriate.

Integration of the different elements of courses and explicit mediation of these different elements seem to enhance learning on the MA programme and within other formal learning opportunities for over-16s.

Policy-makers tend to ignore issues relating to the capacity of providers and employers to deliver programmes and assess qualifications; yet capacity issues appear to have a fundamental impact on the learning process.
For the purpose of this review, we define adult learners as those who have finished their initial education and training and are returning for additional learning. In policy documents, such learners are usually considered to be over 19 years of age. This definition excludes, for example, some Modern Apprentices (MAs) and those taking degrees following the completion of secondary education.
The adult vocational learning system in the UK is complex. This is the result of its historical development (Fieldhouse et al. 1996; Hillage et al. 2000), uncertainty about aims and purposes, changes to funding arrangements and a range of recent government initiatives. The system consists of a plethora of programmes and courses, which may be full- or part-time and involve both formal and/or non-formal/informal learning, often being undertaken by individuals who have not been involved in formal learning for a number of years. They may be studying for one or more of thousands of different vocational qualifications. Alternatively, they might be following a non-accredited programme or be learning at work or through participation in a community project.

Support for such learning is provided by a number of different institutions, including Local Education Authorities (LEAs), FE colleges, HE extramural departments, prisons, voluntary and community organisations and the church. Funding for adult learning can come from the learners, the state, employers, voluntary groups, or a combination of all of these. Thus, drawing the boundaries between private and publicly funded provision is problematic. A broad definition of the adult learning system would therefore encompass:

- full- and part-time FE and HE courses
- employer-provided training
- non-formal learning at work and in the community
- adult and community learning (ACL), involving both LEA provision funded by the LSC and non-LEA provision
- learning interventions grounded in active labour market policies such as the learning strands in the New Deal and Work-Based Learning for Adults (WBLA) schemes
- special projects and initiatives funded by, for example, the Union Learning Fund (ULF).

The scope of this review is limited by considering only those programmes which are wholly or mainly funded by the state. In addition, we are excluding HE programmes. Also, we only consider programmes that have been evaluated, so that evidence on purposes, learning outcomes and processes is available. Given the current policy focus on widening access to adult learning and the provision of basic skills, this produces a rather lopsided feel to the literature available for review. There is, as far as we can judge, no evidence, apart from the rather general outcomes of the National Adult Learning Surveys (NALS) (Fitzgerald, Taylor and LaValle 2003) and inspection reports, on the provision of more traditional adult vocational learning in, for example, FE colleges. We know that it is occurring, but we have no evidence on which to judge its outcomes or the learning processes that are effective in producing those outcomes. This state of affairs is corroborated by Unwin et al. (2004, 3) who comment in their review on the impact of vocational qualifications.

21 We appreciate the current debate around the use of these terms, but for the purpose of this review we adopt the definitions given by OECD (2003, 25). Formal learning is defined as taking place in an organised, structured setting. It is clearly identified as a learning activity. Non-formal learning refers to organised activities that are not explicitly identified as learning activities, but have a major learning component. Informal learning occurs by chance or during everyday activities (work, family life, leisure, etc). Following authors such as Billett (2001a) and Eraut (2000), here we use the term non-formal to refer to learning that is considered both informal and non-formal in the OECD definition. See Colley, Hodkinson and Malcolm (2003) for a review of the issues surrounding the use of such terms.
There is a lack of research on the delivery of [vocational qualifications] other than N/SVQs. This makes it difficult to draw any conclusions about the relative effectiveness of different approaches and, importantly, on what the implications are for teaching and learning.

In a similar vein, it is clear that many employers provide substantial formal training opportunities for their employees, typically those that are already well qualified. Such learning is privately funded and is beyond the remit of public policy. However, because of public policy interest (e.g., PIU 2001) and the growing appreciation of its importance for developing job-related knowledge and skills (e.g., Coffield 2000; Billett 2001a; Ashton and Sung 2002), this review includes non-formal learning at work within its scope.

Understanding the adult learning system is best achieved through considering funding streams. Within the publicly funded system, there are two main funding streams: adult and community learning (ACL) and adult vocational learning in FE colleges. Following the Learning and Skills Act 2000, ACL is administered by LEAs, using money routed via the LSC.\(^22\) The LSC took over responsibility for this part of the adult system in 2001. The rationale was to enable the development of a formula-funded, high-volume, high-quality adult learning service that was consistent across the country and which met local needs in a coherent way (Winterton and Winterton 2003).

Unsurprisingly, given the relatively short timespan since the LSC took over responsibility for the system, ACL is in considerable flux. Funded provision ranges from one-off taster sessions to longer accredited programmes, such as HE Access courses. Different LEAs discharge their duties to provide ACL in different ways, though all use more or less coherent learning partnership arrangements to deliver learning to meet community needs. Delivery is contracted out both to large institutions, such as FE colleges, and to small community groups and voluntary organisations that are deemed particularly successful at reaching under-represented groups. Such diversity of provision is variously described – as representing an unmanaged system (ALI 2003); or as essential to deliver the rich, flexible and diverse range of learning opportunities appropriate to meeting community needs (Callaghan et al. 2001; Winterton and Winterton 2003).

ACL is supported by additional funding streams that run both in concert with the main ACL provision and parallel to it. For example, the Adult and Community Learning Fund (ACLF) provided additional money to support innovative programmes with a focus on basic skills and outreach work. Developing basic skills provision was supported by funding for the nine Adult Basic Skills Pathfinder projects that trialled the key elements of the Skills for Life strategy – the national standards for adult literacy and numeracy, adult literacy and numeracy curricula, intensive training for teachers to deliver learning using the new curricula, the new national tests at Level 1 and Level 2 – and for the Adult Basic Skills Pathfinder Extension Activities (see Table 3).

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\(^22\) This arrangement supersedes the previous division between non-schedule 2 further education (i.e., education for adults not leading to academic or vocational qualifications) and schedule 2 further education. Following the Further and Higher Education Act of 1992, the former was the statutory responsibility of the LEAs and the latter was the responsibility of the Further Education Funding Council (FEFC).
Running in parallel to ACL, there are – or have been – a variety of other initiatives, including:

- the Union Learning Fund (ULF) to promote activity by trade unions to increase the take-up of learning in the workplace
- the Skills Development Fund (SDF), launched in 1999 to assist the Regional Development Agencies (RDAs) in improving the regional skills base
- programmes that form part of active labour market policy rather than education and training policy, such as the learning strands in the New Deal programmes and WBLA
- initiatives designed to overcome access barriers, such as the Employer Training Pilots and Individual Learning Accounts (ILAs).

In addition, adults can join programmes that are open to everyone, run by FE colleges; for example, vocational, academic and basic skills courses. The government is committed to supporting free learning for everyone up to Level 2. With the exception of areas of likely skills shortage, however, individuals and/or employers will be expected to pay for courses at Level 3 and above (DfES et al. 2003).
Traditionally, the purposes of adult education in England were liberally conceived and linked to its 19th-century origins in the work of community and church-based groups. The twin purposes of learning – for social and community reasons, and for economic benefit – date back to the origins of the system. However, as with other parts of the education system, the primary focus for adult learning, at least at the policy level, has become increasingly vocational (Grubb 2001; Ryan 2003; Grubb and Lazerson 2004). Accompanying this vocational turn has been an increased emphasis on accredited programmes and obtaining qualifications as key outcomes of adult learning.

There is also a need to distinguish between a programme’s official purpose and the purposes that individuals have for participating in such programmes. A programme may be offered for avowedly non-vocational purposes, but those participating may be doing so for vocational reasons. This is reflected in the results of the 2002 National Adult Learning Survey (NALS) where respondents reported that achieving vocational outcomes was their main reason for participating in learning (Fitzgerald, Taylor and LaValle 2003). Respondents to a self-completion questionnaire survey of adult continuing education classes in Gloucestershire had vocational purposes in mind when enrolling for classes designed to provide learning for recreational, leisure and self-development purposes (McGivney 1994, cited in Callaghan et al. 2001). Taylor Nelson Sofres (2002) record the importance of vocational purposes for participation in basic skills programmes in the nine Adult Basic Skills Pathfinder areas.

The UK’s publicly funded adult learning system is primarily concerned with offering ‘second-chance’ learning opportunities for those who left initial education without the level of competence deemed necessary to meet both the needs of employment and wider participation as a citizen. Within this wide remit, there is an increasing policy emphasis on widening the participation of hard-to-reach learners, promoting social inclusion and community renewal, and developing basic skills (Winterton and Winterton 2003). Thus, the LSC launched a national strategy for widening adult participation in 2003 (LSC 2003). The government’s Skills Strategy (DfES et al. 2003) also emphasises the need to widen adult participation. The emphasis on basic skills runs across a number of funding initiatives; for example, the ACLF and the ULF. Attainment of basic literacy and numeracy skills is seen as a precursor to more specific vocational learning that leads to a qualification.
Callaghan et al. (2001, ix) point out in their review of the literature on adult education that it abounds with ‘anecdotal evidence of transformational changes in individuals’ lives’, but there is a lack of systematic evidence that demonstrates the long-term benefits for individuals. This is a problem that bedevils evaluations of the adult learning system: they record purposes and good intention, but are relatively weak on measuring vocational outcomes.

### Affective outcomes

All the studies reviewed emphasised the importance of affective outcomes for adult learners. These fall largely into two categories. First, developing self-confidence and self-esteem was seen as an outcome by 35% of learners in the NALS (Fitzgerald, Taylor and LaValle 2003). Callaghan et al. (2001), reporting on the studies of Dench and Regan (2000), Aldridge and Lavender (2000) and the initial synthesis of research findings by the Centre for Research on the Wider Benefits of Learning (CRWBL), indicate the importance attached by adult learners to improved self-confidence and self-esteem, which will, it is claimed, lead to increased employability.

Callaghan et al. (2001) also report on research by Lalljee, Kearney and West (1989) which uses standard psychometric tools to assess the impact on learners participating in courses designed to develop critical skills, confidence and personal autonomy. Their research found that participation in such courses did result in improved self-confidence. Taylor Nelson Sofres (2002) report that increased self-confidence was an important outcome from participating in basic skills programmes in the nine Adult Basic Skills Pathfinder areas. Beder (1999) provides evidence from US studies that participating in adult education had a positive effect on learners’ self-image.

The qualitative evaluation by Barnes et al. (2003) of the Adult Basic Skills Pathfinder Extension Activities also found that increased confidence was the main outcome of participation. This manifested itself through the number of everyday activities that the interviewees said they could now do more easily, such as simple calculations and an improved ability to budget. In addition, some interviewees reported increased assertiveness. Some of the employed learners perceived that their ability to undertake everyday work tasks, such as stocktaking, had also improved, though most who were employed mentioned no difference as a result of participating in the different courses. These comments by learners were consistent with the interviews with teachers.
Reports on the evaluation of the Adult Basic Skills Pathfinder Extension Activities by Bonjour and Smeaton (2003) and White, Killeen and Taylor (2003) rely on survey data. Using this self-report data, Bonjour and Smeaton report that increased confidence was the most important outcome identified by participants across all of the extension activities. However, comparing the pre- and post-course questionnaire results suggests fairly static self-efficacy levels. This may be due to the fact that the pre-course questionnaires were administered shortly after the course started. The major change (a 6% increase) was increased confidence in replying to a letter about a hospital appointment.

Moreover, improving attitudes towards learning is seen as a key outcome in relation to progression to further learning. Gorard and Rees (2002), for example, conclude that one of the main reasons for non-participation in learning is because learning is not deemed appropriate by the individual to develop his or her life. Overcoming this attitudinal barrier to participation is a key outcome for hard-to-reach learners, especially in the initial phase of their learning trajectory.

In addition, the evaluation by Barnes et al. (2003) suggested an improvement in motivation on the part of some learners and an increased willingness to get back into routines. However, all of these were essentially short-term gains and whether they persisted is unknown.

**Knowledge and skills**

The best evidence on knowledge and skill acquisition comes from research on adult basic skills education. The most reliable form of evidence with which to detect cognitive gains is test data derived from controlled trials. However, using test results to measure learning gains in adult basic skills is bedevilled by methodological problems – particularly the identification of suitable tests that can detect small improvements in performance and assuring the content validity of the tests. The following example illustrates the point.

On 3 November 2003, the DfES posted a news briefing on their website in which it claimed significant early gains from the implementation of the new Skills for Life strategy. This claim was based upon comparing the number of adults in the UK judged to be below the Skills for Life baseline (Level 1, i.e. a D–G Grade GCSE) from the 1997 International Adult Literacy Survey (7m) with the number found to be below that level in the 2003 Skills for Life Survey (5.2m). However, a report by Sticht (2004), commissioned by the Basic Skills Agency (BSA), is highly critical of this conclusion because of the very poor construct validity of the Skills for Life survey items and the inappropriateness of comparing results from two tests that were not measuring the same thing.
Brooks et al. (2000), in their aptly named report *Assembling the fragments: a review of research on adult basic skills*, provide evidence about cognitive gains on basic skills courses in the UK and the US. They conclude on the basis of the British evidence that:

- there was plausible evidence that basic skills tuition benefited students' reading and writing
- the average gains in reading and writing in general basic skills provision were not dramatic, but worthwhile
- worthwhile gains in reading and writing also occurred for parents in family literacy programmes
- there was no evidence on amounts of tuition above 100 hours
- there was no evidence from Britain on the impact of general adult numeracy tuition
- there was suggestive evidence that family numeracy courses benefited adults' numeracy skills.

The meta-analysis by Torgersen and Brooks (2003) of the outcome of 18 controlled trials showed that participating in adult basic skills education does result in statistically significant gains compared to not participating. However, no evidence is presented as to the nature of these gains in their research summary.

Some evidence about gains in basic skills comes from the evaluations of the newer basic skills interventions. Taylor Nelson Sofres (2002) record that 83% of learners thought they had developed their skills, at least to some extent, in relation to writing letters and filling in forms; 73% thought the course had improved their spelling; and 86% thought participation had improved their numeracy skills. CRG (2002) report – on the basis of face-to-face interviews with Pathfinder staff, basic skills tutors and trainees engaged in teaching and learning in the Adult Basic Skills Pathfinder areas – a positive response to the national basic skills tests. However, they could not match learners participating in the pilots with results from the national tests, thereby providing no clear evidence on learning associated with specific programme participation.

In the qualitative evaluation by Barnes et al. (2003) of the Adult Basic Skills Pathfinder Extension Activities, teachers reported a positive improvement in the participants’ competence. Bonjour and Smeaton’s (2003) survey results indicate that 74% of those participating in the Adult Basic Skills Pathfinder Extension Activities attained a qualification.
Progression

The lack of longitudinal studies of adult learners means that it is difficult to find concrete evidence on progression outcomes. Brooks et al. (2000), for example, found no representative data on students taking general basic skills courses. They cite a local example involving Thurrock College where 12 out of the 30 people recruited to a basic skills course stayed on at college after that course was finished to complete Wordpower certificates. In the Family Literacy Demonstration Project (Brooks et al. 1996), 80% of participants planned to carry on studying, and 12 weeks after the end of the course, 70% were taking another course. Barnes et al. (2003) reported that almost all of the learners they interviewed were planning to take additional courses in the future, though whether they actually did so is not known. Bonjour and Smeaton (2003) report that 55% of those who had participated in Adult Basic Skills Pathfinder Extension Activities had started a new course and the majority of participants were interested in future education and training.

Economic benefits

There is little evidence of the economic benefits to individuals from participating in ACL (Callaghan et al. 2001), in part because qualifications – the normal proxies used for skills in estimating rates of return – have historically not been a major feature of this part of the system. However, there is evidence of the economic and employment deficits experienced by individuals with poor basic skills (eg see Ananiadou, Jenkins and Wolf 2003). The US evidence on economic benefits from participating in adult education and basic skills programmes is quite positive (Beder 1999, reported in Brooks et al. 2000). For example, five studies out of the six reviewed by Beder suggested that participation in adult education resulted in increased wages. Taylor Nelson Sofres (2002) reports on the perceptions of learners taking part in programmes within the Adult Basic Skills Pathfinder areas: 59% of unemployed participants thought that participation would help them to get a job and 54% of those who were employed thought that the training would help them to get a better job. Whether this actually happened is not known.

Bonjour and Smeaton (2003) report increased employability for those engaged in the Adult Basic Skills Pathfinder Extension Activities. For example, those who had participated showed increased labour market attachment in terms of job-search behaviour and employment aspirations. There was also some evidence of an improvement in the contractual conditions of those who were employed and had participated in the extension activities.
The evaluations of the various New Deal programmes and WBLA also suggest the positive effects of participation on employment prospects (see e.g., Lissenburgh 2001). However, a note of caution needs to be struck until there is firmer evidence on short- and long-term outcomes. Grubb's (1995) review of the evaluations of the various job training programmes in the US suggests that these do result in small, but statistically significant, increases in employment and earnings; and a reduction, for those on welfare programmes, of benefits received. However, these gains are small, and the US evidence suggests that on their own they are not sufficient to move people out of poverty or totally out of the welfare system. Furthermore, the benefits seem to be short-lived and decay rapidly. Most importantly, they do not give people the opportunity to progress into middle-class jobs and the incomes they provide.

Grubb (1995) argues that there is a need, therefore, to align job training programmes with more extensive opportunities to participate in education. However, in the English context there is a potential clash between educational objectives, where a provider such as an FE college would see educational advantages in retaining a learner so that he or she completed a programme; and the job-related outcomes valued by the Employment Service, where early exit from a learning programme to take up employment would be counted as a success. Given that the vocational learning system of the future will continue to have a substantial role in providing learning opportunities for unemployed people, reconciling these two sets of potentially competitive outcomes is an important issue.

The pattern of returns to individuals of obtaining vocational qualifications is complex. In the most recent analysis, McIntosh (2004) uses a pseudo-cohort analysis to show:

- positive returns to men and women for both Edexcel BTEC HNDs/HNCs and Edexcel BTEC National Diplomas and Certificates
- positive returns to men for craft-based qualifications such as City & Guilds certificates
- positive returns to women, in some years, for higher-level RSA certificates
- positive returns to individuals who did not obtain any qualifications at school for a wide range of qualifications. However, NVQs at Levels 1 and 2 show no positive effect on earnings, even for those without school qualifications
- zero returns for all vocational qualifications in the public sector, with the exception of teaching and nursing qualifications, Edexcel BTEC HNDs/HNCs and Edexcel BTEC National Diplomas and Certificates.
Bearing in mind the limitations of rates-of-return analysis, especially omitted ability biases, it would appear that private sector employers will reward adults who left school with no qualifications, but who hold professional vocational qualifications, NVQs at Level 3 and above, and the more traditional craft-based and secretarial/business administration qualifications at Level 2. On the other hand, NVQs at Levels 1 and 2 appear to produce no return in the labour market for any learner. McIntosh (2004) acknowledges that the reasons for the zero rates of return for non-professional vocational qualifications in the public sector are not clear, but points out that there would appear to be little incentive for public-sector employees to gain such qualifications. For those who leave school with two or more A-levels, it is only degrees and professional vocational qualifications that seem to yield a return in the labour market, though women achieve positive returns for HE diplomas, other HE qualifications and teaching qualifications.
Research on learning processes is undoubtedly the area of greatest weakness in the literature we reviewed. Brooks et al. (2000, 138; emphases as in the original) comment that:

One very significant factor needs to be stated immediately. If the question is put as ‘What factors have been shown by research to be causally related to progress in adult basic skills?’, the answer is NONE... It is clear that barely a single intervention or training study has been successfully carried out in the adult basic skills field.

The review by Coben et al. (2003, 7) confirms that ‘evidence on adult numeracy tuition is sparse and unreliable.’

Such statements may seem surprising since the adult education field is full of advice about pedagogical, or rather andragogical (Knowles et al. 1984), strategies that should be adopted with adults in order to achieve effective learning outcomes. The OECD’s (2003) thematic review Beyond rhetoric: adult learning policies and practices, for example, identifies a range of practices which, it is claimed, are unique to adult learners.

These have been gleaned from the various country reports produced for the review and reflect either existing good practice or are further examples of very general principles that could be combined to form models of ideal practice. However, it is difficult to judge the ways in which and the extent to which any of these principles were applied in practice in the evaluation studies we reviewed, as so few of them directly observed teaching. Furthermore, given the evident cost of implementing many of the strategies deemed necessary for adults, the lack of evidence about the effectiveness of any of the suggested approaches and strategies is worrying. As Grubb (2001, 15) comments:

There is an enormous volume of writing on approaches to teaching adults, stressing that their learning goals are different from those of conventional-age students and emphasizing the need to develop materials and pedagogies appropriate to adults ... However, the references to “andragogy” seem formulaic and empty, since they were not usually followed by examples ... these [country] reports had little to say about the central activity in adult education – teaching – or about the form of instructor preparation that might enhance teaching.

Grubb (2001) argues, rightly in our view, that issues to do with teaching and teacher training are badly neglected in the adult education field and especially in the area of adult vocational education. This is a view shared by Brooks et al. (2000) and Coben (2003) in relation to adult basic skills teaching. Coben, for example, records the need for detailed, preferably longitudinal, studies to determine the effectiveness of adult numeracy instructional strategies and Brooks et al. (2000, 155) call for ‘An immediate, structured programme of studies exploring the factors thought to cause progress in basic skills. No other research in the field should be given priority over this.’
The Basic Skills Agency (2000) provides a list of suggested general strategies based upon the collected experience of basic skills teachers and research:

- deliver clearly structured teaching
- provide for the acquisition of skills in a range of contexts that meet the motivation and interests of learners
- have high expectations of learners’ achievement
- produce for each learner a learning plan that lists and provides activities and material to meet specified individual need
- regularly assess and review learner progress, and adjust individual learning plans accordingly
- enable learners to gain credit and accreditation for their learning and enable them to study further
- adjust the length of programme to the level of skills required.

Where such teaching strategies were enacted within programmes, as seems to have been the case with the Adult Basic Skills Pathfinder courses and their Extension Activities, then learners were positive about their experience (Taylor Nelson Sofres 2002; Barnes et al. 2003; White 2003; White, Killeen and Taylor 2003). This is important, given that the qualitative evaluation of the Adult Basic Skills Pathfinder Extension Activities showed that many adult learners had had bad prior experiences with schooling (White 2003).

Thus the experience of, for example, one-to-one help in the Adult Basic Skills Pathfinder courses, combined with very small class sizes, – with fewer than five students, on average – were clearly positive experiences for the learners interviewed. However, enjoying a learning experience does not necessarily attest to its effectiveness in achieving desired outcomes.

**Programme characteristics that support vocational learning**

By examining the limited findings from across the range of evaluation studies we reviewed, and combining these with the more general research literature, we identified five general classes of process-related factors that seem to play a role in determining successful outcomes in programmes for adults.
An effective guidance and support system, including active management to prevent drop-out

The adult vocational learning system is complex and difficult for learners to navigate. Many types of provision – for example, those associated with WBLA and the New Deal – require that learners be referred to an appropriate learning provider by an Employment Service (ES) adviser. To be effective, this requires the adviser to have a firm grasp of the needs of the client and know which local providers offer provision suitable for meeting these needs. In the absence of such knowledge, the learning offered may be inappropriate, leading to frustration and so increasing the potential for drop-out. For example, within the WBLA provision, where the emphasis is on moving clients into employment as quickly as possible, Short Job-Focused Training (SJFT) lasts from 2 to 6 weeks. This ‘quick fix’ provision is intended to provide certificates or evidence of having acquired concrete work skills. It is only useful if the client is both motivated and is ‘job ready’; it is not suitable for those needing basic or ‘soft’ skills, where considerably more time is needed to make progress (Winterbotham, Adams and Kuechel 2003).

However, there appears to be little support available to meet the transaction costs incurred when developing information-transfer mechanisms and very little regulation to support such transfer. For example, Winterbotham, Adams and Kuechel (2003) report that WBLA providers were not required by their contracts to make presentations to ES advisers about the provision they were offering. Some WBLA providers did make efforts to work inside the Job Centres in order to interview potential clients and, in so doing, provide information to the advisers. However, given the low numbers of clients being referred to them, the costs of this proved too high for some providers. Consequently, they withdrew. This problem of sharing information and matching learners to appropriate learning opportunities seems to be a problem that pervades the adult system, and which will only be exacerbated as more providers join the learning market.

Once the learner has been referred, early enrolment on appropriate provision is essential if he or she is not to lose interest. Since referrals are being made throughout the year, roll-on roll-off provision is ideal. However, if the flow of referrals is not high, then providers have to delay starting programmes until they have enough clients to make the programme economically viable. Such delays can result in reduced learner motivation. Evidence from the WBLA evaluation (Winterbotham, Adams and Kuechel 2003) suggests that this was a problem in some areas.
Similarly, given the design of WBLA programmes, a continual supply of employer placements is needed, but this is not always at hand. Certain occupations have particular requirements or occupational structures which make the provision of work placements, and hence access to learning, more problematic. For example, strict health and safety requirements in the construction industry may limit opportunities for placement. In addition, the increasing use of subcontracting means that an increasing percentage of employers in the construction industry are self-employed, often working within very small firms or as sole traders. Clearly, for such individuals to provide a work placement is both potentially expensive and risky.24

Furthermore, interviews with teachers, conducted as part of the evaluation of the Adult Basic Skills Pathfinder Extension Activities, indicate the need to provide continuing support for learners once they have made the transition to the workplace, if they are to consolidate the gains already made and progress further in improving their basic skills. Evidence from both the Adult Basic Skills Pathfinder Extension Activities and the evaluation of the first year of the Employer Training Pilots indicates the likely need to pay employers, either directly through wage replacement, or indirectly though the provision of free and subsidised training, to enhance the likelihood of employees receiving such support (Hillage and Mitchell 2003; White 2003). This is despite the apparently immediate and concrete changes which employers described in the work of their employees as a result of participation in the Adult Basic Skills Pathfinder Extension Activities.

**More intensive delivery can enhance completion rates**

The amount of time needed to achieve significant learning outcomes may vary considerably depending upon a learner’s needs and the desired outcomes. For those close to being job-ready, a very short period of learning may suffice to meet their needs to attain a certificate as, say, a forklift truck driver.

However, for those further from the labour market, considerable periods of learning may be needed. For example, Brooks et al. (2001) showed that attending 51–60 hours of basic skills classes was associated with greater progress in reading. For standard basic skills courses, this means attending regularly over several months. Winterbotham, Adams and Kuechel (2003) report that ES restart advisers found that while their clients made progress with soft skills as a result of participation in 26-week Basic Employability Training provision, they made little, if any, progress with their basic skills during this period. Clearly it is important not to underestimate the amount of time that some adults will need to make progress in their learning in order to achieve significant outcomes such as a qualification or a job.
Research by Brooks et al. (2001) suggests that increasing the intensity of provision with more directive teaching might lead to improved learning gains on basic skills programmes. This hypothesis was tested via the Adult Basic Skills Pathfinder Extension Activities, where three of the programmes being offered involved either compressing the learning into a shorter time (residential and intensive courses) or by focusing more tightly on learning outcomes (highly structured and prescriptive courses). The other strand of the Adult Basic Skills Pathfinder Extension Activities offered financial incentives – either directly to the learner or to their employer – for the learner’s participation and taking of the national basic skills test.

White (2003, 34) reports that participation in Adult Basic Skills Pathfinder Extension Activities resulted in positive impacts in terms of course completion and an increased rate of achievement of qualifications – that is, short-term educational outcomes and short-term gains in employment – compared to a comparison group of learners taking more traditional basic skills courses. The employment impact at nine percentage points is particularly notable. However, the experience of participating in an extension activity appears to reduce subsequent enrolment on new courses, compared to learners on more traditional basic skills courses.

The explanation offered with regard to this effect is that the short-term intensive programmes enabled learners to make early gains in attainment and in self-confidence. Providing financial incentives motivated participants to complete courses and obtain certificates. Earlier completion enabled the learners then to focus on job-search activities at an earlier stage than their matched counterparts who were participating in traditional basic skills programmes. Thus, by the time of the second round of interviews, 9–11 months after the interviews held early on in the course, more of the learners on the extension courses had progressed into employment.

**Experienced and qualified teachers are the key to success**

The evidence suggests that the quality of teachers is a key factor in providing a positive learning experience that leads to valued outcomes. For example, Brooks et al. (2000, 141) concluded that three factors significantly affected learner progress in basic skills:

- whether teachers had qualified teacher status
- whether teachers had support from learning assistants
- regular attendance at classes which, in turn, is partly a function of the quality of the relationship developed with the teacher.
Qualitative evidence from the Adult Basic Skills Pathfinder courses (CRG 2002; Taylor Nelson Sofres 2002) supports the importance of the quality of teachers and stresses the need for teacher training and development. The nature of the skills and experience required is evident from several of the evaluation studies and literature reviews:

- a deep technical understanding of literacy and numeracy
- training in techniques specific to the teaching of literacy and numeracy and not in general teaching skills
- the ability to diagnostically assess learning needs and problems and to translate these into a learning plan
- a capacity to adapt national programmes and directives, such as those associated with the Skills for Life strategy, to local conditions and learners’ needs.

It is clear that high-quality initial training and continuing professional development (CPD) is needed to develop such knowledge and capabilities. In order to support such CPD, however, providers require some confidence about funding streams. For example, some WBLA providers commented that formula funding was welcome because it provided regular cash flow, which enabled money to be made available to support staff training (Winterton and Winterton 2003). Without a steady funding stream, providers are less likely – or able – to commit to long-term planning, including the development of teachers. Vocational learning policy as a whole does not provide sufficient capacity-building funds for vocational teacher recruitment and professional development (Stasz and Wright 2004).

**Embedded learning and ongoing work activities can enhance participation, retention and completion**

The idea of embedding vocational learning in wider ongoing activity, such as community regeneration projects or work-related tasks, is a common recommendation across the studies we have reviewed. The best evidence for the effectiveness of this approach comes from the evaluation of the Adult Basic Skills Pathfinder Extension Activities. The fixed-rate replacement cost courses compensated employers when their employees took part in a basic skills course at their workplace. Participants and employers judged this type of provision to be successful.

The value of embedded learning is also supported in a review of Australian research (Watson, Nicholson and Shaplin 2001) which advocates an integrated approach to the delivery of basic skills learning, using team teaching and contextualised learning, enhanced by customised resources. Courtenay and Mawer (1995, 2, quoted by Watson, Nicholson and Shaplin 2001) provide a definition of literacy and numeracy integration:
Integrating English Language, literacy and numeracy into vocational education and training involves concurrently developing language, literacy and numeracy and vocational competence as interrelated elements of the one process. This involves designing and delivering programmes which meet the skills needs of the job or occupation and which are responsive to the diversity of learners’ needs and resources.

However, the costs related to such provision may be substantial as they must be tailored to the needs of each workplace and geared to both employers’ and learners’ needs (White 2003).

More research is needed to evaluate the effectiveness and efficiency of such approaches. Nonetheless, the idea of locating vocational learning close to, or in the worksite, is one that is gaining in popularity, especially as new forms of working are introduced.

**Assessment and diagnostic testing may be helpful**

There is some ambivalence expressed about the importance of assessment in the various evaluations we reviewed. On the one hand, there is the view that good diagnostic and formative assessment is essential if learners are to make progress. Such a view fits with the clear evidence about the importance of formative assessment in relation to the learning gains of younger learners (Black and Wiliam 1998). In addition, the new National Basic Skills Test was seen as being a positive experience and opportunity by many of the tutors interviewed as part of the Adult Basic Skills Pathfinder evaluations (CRG 2002; Taylor Nelson Sofres 2002).

On the other hand, government policy generally has a more limited view of measuring learning gains – obtaining a qualification. However, enrolling some adults, especially those who are just moving back into learning, on accredited courses could be counterproductive to the aims of boosting confidence and overcoming attitudinal barriers to learning. Callaghan *et al.* (2001) provide some examples of alternative ways of assessing learning gains, but provide no data on actual assessments of learning gains using these approaches.
5.5 Non-formal learning at work

There is a growing recognition that non-formal and informal learning at work is a key mechanism through which people develop their vocational knowledge and skills (OECD 2003). It is clear from research that non-formal learning at work takes place through a variety of different mechanisms. Much workplace learning is implicit in nature and involves constructing tacit knowledge (see Polyani 1964, 1967; Bereiter 2002). Eraut (2000) examines the problematic nature of implicit learning and tacit knowledge, and highlights the difficulty of defining them in relation to professional work. He provides a useful typology of non-formal learning (Table 4) that emphasises the importance of time in relation to intention in learning non-formally.

### Table 4
A typology of non-formal learning

<table>
<thead>
<tr>
<th>Time of stimulus</th>
<th>Implicit learning</th>
<th>Reactive learning</th>
<th>Deliberative learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current experience</td>
<td>A selection from experience enters the memory.</td>
<td>Incidental noting of facts, opinions, impressions, ideas.</td>
<td>Engagement in decision making, problem solving, planned informal learning.</td>
</tr>
<tr>
<td>Future behaviour</td>
<td>Unconscious effects of previous experiences.</td>
<td>Being prepared for emergent learning opportunities.</td>
<td>Planned learning goals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Planned learning opportunities.</td>
</tr>
</tbody>
</table>

Implicit learning, reactive learning and deliberative learning all occur through the production environment of the workplace. The key factor in each of the three types of learning is time. Skill development occurs within the production processes of the workplace, and over time, a worker becomes proficient and competent in performing the tasks. The process of learning takes time through the repetition and practice of tasks, which in turn provide for the facilitation of implicit, reactive and deliberative learning in skill development. However, the extent to which learning in the implicit and reactive modes can be considered purposeful is problematic (James 2004).

**Outcomes**

Much of the growing body of research on non-formal learning in the workplace aims to understand learning processes. Less attention has been focused on outcomes of learning and next to none on the effectiveness and efficiency of non-formal learning as a means of, for example, increasing the level of workforce skills. Indeed, there is a danger that overemphasising the importance of non-formal learning could lead to a situation where it is judged that there is little or no need for more formal training for employees, especially the less well qualified.
At a conceptual level, Eraut et al. (1998) provide a typology of the sorts of outcome that might result from non-formal learning in the workplace, based on their research with mid-career professionals learning in a wide range of settings (Table 5). The typology attests to the wide variety of potential learning outcomes that can result from non-formal learning in the workplace. This typology has subsequently been expanded, following additional research with new recruits to the nursing, engineering and accountancy professions (Eraut et al. 2004).

Table 5
A typology of learning for and in the workplace


1 Understanding
- Understanding of situations and systems
- Understanding of colleagues and work unit
- Understanding of own organisation
- Understanding of self
- Strategic understanding

2 Skills
- Technical skills
- Learning skills
- Interpersonal skills
- Thinking skills

3 Propositional knowledge
- General knowledge taught during initial training for occupation
- Specialised occupational knowledge
- Firm-specific knowledge (technical)
- Knowledge of systems and procedures

4 Knowledge resources and how to access them
- People in the department/work group
- People elsewhere in the organisation
- Internally available materials: manuals, records, databases, learning materials
- Networks of customers, competitors, suppliers
- Professional networks
- HE institutions
- Local networks
- Previous employers

5 Judgement
- Quality of work
- Evaluation
- Strategic decisions
- Staff issues
- Prioritising

Evidence from employee surveys (Green, Ashton and Felstead 2001) indicates the importance of non-formal learning at work in developing softer skills such as problem solving, team working and some communication skills. Formal education was found to play only a small part in the development of these skills – non-formal learning at work was far more important. This view is supported by the work of Stasz et al. (1996), which documents how skills such as team working and problem solving are often highly context-specific, so that the development of these skills requires considerable on-the-job learning, of both a formal and non-formal kind.
Davies and Birbili’s (2000) research on learning to write at work also stresses the need for employees to develop contextual knowledge – a substantial knowledge of the organisation’s products and services, customers and clients, processes and procedures (Ashton and Sung 2002) – in order to write effectively. Such learning can only take place in the workplace, largely through non-formal mechanisms. Finally, Destré and Nordman (2002) demonstrate that knowledge dissemination through firms is more rapid when opportunities for non-formal learning at work are greater.

**Processes**

The message from the research on informal and non-formal learning at work is unambiguous when it comes to learning processes: factors such as the organisation of work, the design of jobs and the training philosophy of the firm help to determine how much opportunity an individual has to learn, and the level of skill, knowledge and understanding that develops as a result. In production and service industries designed along Taylorist lines, front-line employees only need to learn enough to undertake the immediate task at hand. Training times for such work may be a matter of a few days or, in the case of fast-food crews, for example, just a few hours (Beach and Vyas 1998). By contrast, managers in such systems have much to learn, which explains the heavy investment in both their formal training and the non-formal development of their contextual knowledge, through practices such as systematic job rotation (Ashton and Sung 2002).

By contrast, Onstenk (1997, cited in Ashton and Sung 2002) argues that the following are important features of job design that produce high levels of learning and skills in the workforce:

- broadening the set of tasks undertaken by the team to provide scope for performing more tasks, e.g. job rotation
- enriching the job through integrating maintenance, repair and quality controls into the job
- giving the group responsibility for problem solving, as well as extending their domain of authority to make decisions
- organising team meetings and discussion opportunities which allow team/cross-team members to learn from one another
- structuring the groups to ensure that they contain members with different levels of skills
- including coaching of colleagues as an explicit part of the job description.

These are the features of work designs that are characteristic of high-performance work systems or organisations. However, the driver for moving from a Taylorist mode of production of goods and services to designing jobs along the lines described by Onstenk (1997) and Ashton and Sung (2002) is not primarily to do with learning. Rather, it is a function of the competitive strategy being pursued by the firm. This suggests that intervening on the demand side of the skills equation to encourage firms to pursue higher-value-added modes of competition, rather than competing primarily on the basis of price, may be an important strategy to raise the demand for vocational learning among adults in employment.

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25 Similar conclusions emerge from the research of Eraut (2000), Eraut et al. (1998, 2004), and Billett (2001a).
The English adult vocational learning system is, because of its historical development, fragmented, localised and voluntaristic. It seeks to serve the twin purposes of social inclusion through increasing a learner's employability and meeting the demand for increased levels of skill for economic growth. However, the literature on learning outcomes and processes for adults is scanty. There appear to be few, if any, studies that have assessed the outcomes achieved by adults in formal vocational programmes leading to craft and technician qualifications. The evidence available from the evaluation of adult basic skills programmes indicates that they are successful at enhancing affective outcomes and, to some extent at least, reading and writing skills, but not numeracy skills. Participation in basic skills and WBL may enhance employment opportunities for some adult learners.

More research is needed to fully understand the processes that can support adult vocational learning. Some studies provide useful empirical results that point to processes that enhance the learning of adults, especially those learning in the workplace. There is also a large theoretical and practice-based literature on adult learning that contains some useful suggestions for practice. However, many questions remain about the most effective ways to increase the participation of adults; and how to structure programmes to provide the right types of learning experience, of an appropriate intensity and duration. Thus, this review offers policy-makers some advice about how to organise vocational learning opportunities for adults, but much more high-quality research to inform both policy and practice is urgently needed.
This section summarises the main themes that emerge from the review of outcomes and processes in vocational learning. In considering these broad themes, it is important to remember that limitations in the literature reduce the ability to reach strong conclusions or to make recommendations.
The literature indicates, first, that vocational learning can enhance motivation, persistence and self-confidence for all groups considered in this review. These effects, however, do not always transfer to other learning activities in which learners are engaged, especially for the 14–16 age group. For adult learners, increased self-confidence and self-esteem may aid employability.

Second, participants do acquire a range of content knowledge and skills from their learning experiences. However, the type and depth of that learning is quite variable.

- 14–16 year olds are more likely to gain social skills and some technical skills rather than academic knowledge.
- 16+ learners acquire some important skills and also gain qualifications, although specific qualifications targets are not necessarily reached.
- Adult learners in adult basic skills programmes appear to enhance their reading and writing skills, but not always their numeracy skills.
- A majority of adult learners participating in Adult Basic Skills Pathfinder Extension Activities report that they do attain a qualification.

There is variable evidence for progression-related outcomes. The paucity of longitudinal data makes it extremely difficult to trace progression at all, especially for adult learners.

- 16+ learners have some advantages in employment with respect to participation and wages, but this varies within and between employment sectors.
- Participation does not always enhance progression to full-time post-compulsory education, and may hamper progression for the youngest group.
- Adult learners show some gains with respect to initial employment and to improving their current employment through programme participation.
- The type of qualification attained seems to matter to the labour market – NVQs at Levels 1 and 2 are less highly valued than those at Level 3, or BTEC National qualifications and HNCs/HNDs, or craft-based qualifications such as City & Guilds certificates.
6.2 Process-related themes

- The literature on processes is even sketchier than that associated with measuring learning outcomes. The literature does provide some general strategies, which differ somewhat for young learners and for adults, but the studies often do not explicitly link processes with outcomes.

- For the youngest age group (14–16), learning should be vocationally relevant and students should be explicitly prepared for what they might encounter in their WBL experience.

- For 14–19-year-old learners, it is important to create effective links between school-based and work-based components of the learning programme.

- In the 16–19 category, where attainment of certain qualifications is emphasised (eg with the Modern Apprenticeship programmes), qualifications should encompass knowledge-based occupational qualifications alongside those advanced in national frameworks (such as NVQs and key skills), and their delivery needs to be coordinated.

- Adults and 16–19-year-old learners appear to benefit when diagnostic assessment is used to help in directing learners to the appropriate programme, when the workplace sector has a tradition of learning, and when the workplace supports learning and training.

- Adults benefit when there is strong guidance and support available, especially when it extends to drop-out prevention. More intensive delivery appears to enhance completion for adults, as does learning that is embedded in ongoing work activities.

- Formal learning is enhanced for all groups when teachers and tutors are experienced and qualified to teach with their respective age group of learner.

- Findings indicate that work-related learning for all groups is enhanced when:
  - social relations at work promote access to knowledge and learning through participation in relevant communities of practice
  - the organisation of work and job design can motivate and provide opportunities for varied knowledge and skill development
  - the workplace values training and learning.

These characteristics generally apply whether the learning is formal or non-formal.
The findings from this review have implications both for research and for policy. As discussed in this review, the research on WBL for all groups is exceptionally thin and consequently of limited use to policy-makers. This is especially true for adult learning. While the government touts an evidence-based policy approach, it appears not to have made the research investment required to understand the quality and effectiveness of the programmes on offer or of those that are planned.

In spite of the paucity of research, the government intends to expand WBL in some areas. For example, the Skills Strategy and the new proposals for 14–19-year-old learners promote the expansion of vocational learning for 14–16 year olds, yet there is little evidence that such learning has more value than the options that these pupils currently have. It may be, for example, that enhancing their academic learning would be a much better option. Similarly, government policy intends to expand the MA programme to include older groups, even though outcomes in some sectors are quite poor.

In order to carry current plans forward (irrespective of the quality of evidence available), a different approach to policy may be required. As discussed in the systems analysis that comprised the first strand of this study (Stasz and Wright 2004), vocational learning policy is primarily carried out through an inducement-type strategy, where funds are directed in particular ways and are expected to change the behaviour of individuals and institutions. Some findings from this review, however, suggest that much more investment should be made in building capacity within the system. For example, it is unclear whether there are enough vocational teachers to match the planned expansion in enrolments. Inducement strategies alone are unlikely to succeed if the system lacks the capacity to change.

There are other signs that the system is not ready to support other aspects of vocational learning policy. The lack of clear progression routes from AMA to foundation degrees, for example, will make transition difficult, even if improvements are made in the guidance and counselling functions that can help individuals to identify the most appropriate paths among the choices open to them.

Issues of structure and implementation seem to be placed on a back-burner while the government focuses on targets and accountability. Ironically perhaps, this review suggests that excessive focus on qualifications may be especially counterproductive for hard-to-reach learners. In these cases, and more generally, attention needs to be directed towards appropriate instructional design and the construction of learning environments that can promote skill attainment. Measures are needed to assess broader ranges of skill. These improvements to the system will again require greater investment in research and capacity building to improve programmes, which in turn will support the reaching of targets.
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