



City &
Guilds

ALLIANCE

SUMMARY REPORT

REMAKING

APPRENTICESHIPS

**POWERFUL LEARNING
FOR WORK AND LIFE**

BILL LUCAS AND ELLEN SPENCER

CENTRE FOR REAL-WORLD LEARNING AT THE UNIVERSITY OF WINCHESTER

CONTENTS

The City & Guilds Alliance for Vocational Education

To underpin our thinking around training and skills issues, we have partnered with the Centre for Real-World Learning at the University of Winchester, the 157 Group of Colleges and the Association of Employment and Learning Providers (AELP) to work collaboratively to create a platform that will help the further education and skills sector to deliver world-class teaching and learning.

The alliance aims to establish an evidence base that builds up thinking about what needs to change in the sector which can then be turned from theory to reality both in the UK and internationally.

All partners in the alliance have committed to providing thought leadership in the sector, promoting best-practices in teaching and learning and designing, testing and delivering practical tools to support the learning and skills sector.

Bill Lucas and Ellen Spencer, Centre for Real-World Learning at the University of Winchester

Bill Lucas and Ellen Spencer are thought leaders in the areas of vocational and expansive education whose work is widely cited and used across the world.

The Centre for Real-World Learning (CRL) is an applied research group with a focus on two main areas:

- the science of learnable intelligence, the implementation of expansive approaches to learning and the coordination of the Expansive Education Network of educators;
- the field of embodied cognition and implications for practical learning and vocational education.

www.winchester.ac.uk/realworldlearning
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Remaking apprenticeships: powerful learning for work and life

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This summary version along with the full report are available to download at:
www.cityandguilds.com/remakingapprenticeships

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FOREWORD	03
1 SUMMARY AND RECOMMENDATIONS	04
2 INTRODUCTION AND HISTORY	06
3 APPRENTICESHIPS FOR THE 21st CENTURY	08
4 THE PEDAGOGY OF APPRENTICESHIPS	10
4.1 SIX OUTCOMES OF APPRENTICESHIPS	10
4.1.1 ROUTINE EXPERTISE	10
4.1.2 RESOURCEFULNESS	10
4.1.3 CRAFTSMANSHIP	10
4.1.4 FUNCTIONAL LITERACIES	10
4.1.5 BUSINESS-LIKE ATTITUDES	11
4.1.6 WIDER SKILLS FOR GROWTH	11
4.2 THREE KEY FEATURES OF APPRENTICESHIPS	11
4.2.1 ON- AND OFF-THE-JOB LEARNING	11
4.2.2 LEARNING FROM AND WITH OTHERS	11
4.2.3 VISIBILITY OF LEARNING PROCESSES	11
4.3 LEARNING METHODS THAT WORK FOR FURTHER AND VOCATIONAL EDUCATION	12
4.3.1 LEARNING FROM EXPERTS	12
4.3.2 PRACTISING	12
4.3.3 HANDS-ON	12
4.3.4 FEEDBACK FOR LEARNING	12
4.3.5 ONE-TO-ONE	12
4.3.6 REAL-WORLD LEARNING	12
4.3.7 AGAINST THE CLOCK	12
4.3.8 ONLINE	13
4.3.9 ANYTIME	13
5 APPRENTICESHIPS FOR THE REAL WORLD	14
REFERENCES	15

FOREWORD



**Kirstie Donnelly MBE,
UK Managing Director
City & Guilds**

A handwritten signature in black ink, appearing to read 'Kirstie Donnelly', written in a cursive style.

The future of the UK economy is dependent upon our ability to meet the skills requirements of our industries, so it's deeply concerning that in recent years we have seen industry leaders up and down the country standing up to say that they desperately need more skilled people, and quickly. Indeed with the anticipated levels of skills shortage, full employment feels far away. However, we mustn't give up on fulfilling both employer and young people's aspirations but rather find new and better ways to solve the challenges we collectively face. That's why I am delighted that through the City & Guilds Alliance, with 157 Group, AELP and the Centre for Real World Learning, we are publishing this report.

There is widespread agreement amongst Government, industry and the education sector that apprenticeships should form a key part of the solution to addressing the issues of skills shortages and unemployment whilst delivering on career aspirations. Although it's encouraging there is a common recognition that there must be a strong focus on this area, and that recent Government reforms are providing a platform for joined up discussion, there still isn't complete alignment about how this should be achieved and implemented.

At City & Guilds, and amongst the Alliance, we believe that now is a time of true opportunity for apprenticeships. Everyone is listening and we have a chance to work together to create a world-class system. The rewards, if we get it right, are huge; high youth employment, a highly skilled workforce, productive industries and a high-yield economy.

To ensure that we have the best chance of capitalising on this opportunity, the City & Guilds Alliance commissioned acclaimed researchers Bill Lucas and Ellen Spencer to write this report. The result, *Remaking Apprenticeships*, is a significant review of the pedagogy of this area and considers the history of apprenticeships up until the current day, making recommendations on how they should be delivered in the future and, most crucially, by whom.

Additionally, the report looks at the issues that have stopped apprenticeships from reaching their potential in the UK in recent decades, including the interference of successive governments, which have led this once well-respected training route to gain a poor reputation. It notes that apprenticeships now need to be clearly defined and rebranded so they once again become synonymous with the very highest quality.

Remaking Apprenticeships makes a compelling case for putting learning back into apprenticeships and concludes that everyone involved needs to work together towards one common goal with clearly defined roles and with employers leading the way.

At City & Guilds we firmly believe that now is the time to remake apprenticeships and that if we take the right approach we can ensure the UK's apprenticeship system will compete with the very best on the world stage. Our hope is that this report helps to galvanise the key players to drive the positive change that is needed and actively shape the potentially great future of apprenticeships.

1 SUMMARY AND RECOMMENDATIONS

Remaking Apprenticeships is a significant review of the research into the pedagogy of apprenticeships – the art, science, craft and nous of teaching and learning methods for apprentices.

An apprenticeship is a job with significant in-built learning designed to prepare individuals for future employment, employability and active citizenship. Across the world apprenticeships are seen as an important and powerful way of developing a high-quality workforce. In England the number of apprentices has been growing rapidly but not always linked to direct occupational needs, leading to concerns about their quality. The *Richard Review* (2012) addressed many structural issues and gave employers in England a much greater role in specifying standards and organising training. But Richard did not address one of the most important determinants of quality in apprenticeships of all – the quality of the learning received by apprentices.

Apprenticeships, like vocational education more generally, have in recent times been positioned as a second-class alternative to academic pathways, with a set of largely instrumental concerns about funding structures and delivery systems dominating discussions. But they can be offered as an ambitious, expansive and powerful alternative to academic routes, suitable for a wide range of learners and with a well-articulated pedagogy of its own. We argue that it is the second of these two routes which will enable England's system to be truly world class. The focus now and over the coming years should be on really understanding how different kinds of apprenticeship learning can lead to the accomplishments we need in the 21st Century workforce.

To enable this to occur we need to state unambiguously the broad range of desirable learning outcomes of apprenticeships. We suggest that there are six:

- 1 Routine expertise in an occupation.
- 2 Resourcefulness – the capacity to think and act in situations not previously encountered.
- 3 Craftsmanship – pride in a job well done and an ethic of excellence.
- 4 Functional literacies – numeracy, literacy, digital and graphical.
- 5 Business-like attitudes – customer and client-focused, entrepreneurial and aware of value for money, whether in for-profit, public sector or third sector roles.
- 6 Wider skills for growth – the dispositions and wider skills for a lifetime of learning and change.

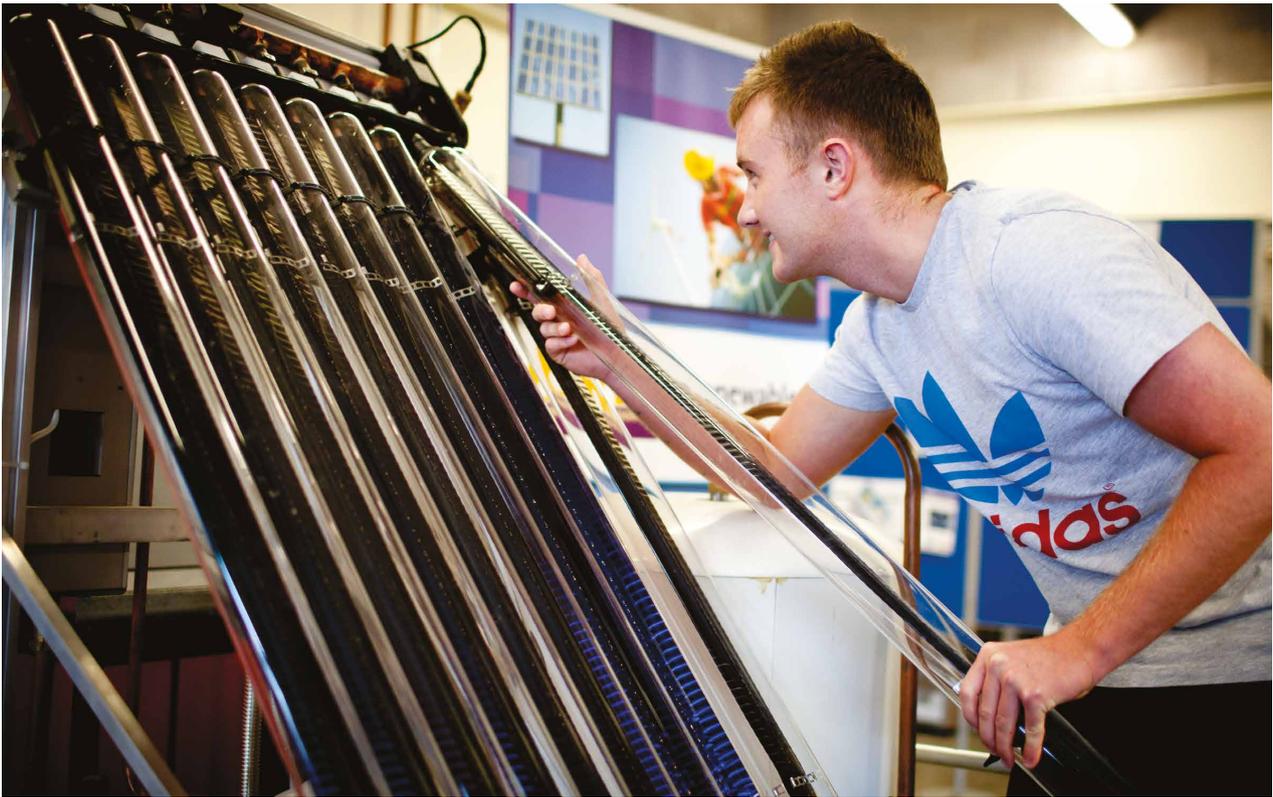
All too often the focus defaults to the first and the fourth of these outcomes and the case for the effectiveness of apprenticeships is consequently diminished. For higher level apprentices, while the language of these six outcomes may need refining, we believe that the concepts are equally valid.

Remaking Apprenticeships traces the history of apprenticeships in order to ensure that knowledge of the past informs thinking today. It describes in detail the pedagogy of apprenticeships needed to create world class apprentices in England. It identifies three core dimensions:

- 1 Both on-the-job and off-the-job learning.
- 2 The essentially social nature of apprenticeship learning as part of a specific vocational group.
- 3 The importance of learning processes being made very visible to all the partners – employers, colleges, training providers, Higher Education Institutions, professional bodies and others – given that we know this will help to improve the quality of learning.

Remaking Apprenticeships identifies tried and tested learning methods such as those which involve:

- learning from experts
- deliberate practising
- hands-on learning
- feedback which promotes learning
- real-world problem solving
- one-to-one coaching and mentoring
- competing against the clock
- seamless blending of online and face-to-face learning.



Specifically we conclude that Government, employers and the range of training and learning providers involved with apprenticeships need to work together to:

1 REMAKE APPRENTICESHIPS

Ensure that learning is back at their heart by shifting the focus onto the kinds of learning and teaching methods most likely to create world class apprentices. Use the Trailblazer projects in England (and whatever opportunities present themselves in other countries) to develop a pedagogy of apprenticeships which unequivocally aims to deliver our six desired outcomes.

2 FACILITATE A DEBATE ABOUT THE PEDAGOGY OF APPRENTICESHIPS

Within and across sectors identify best practices and explore the different kinds of learning which are required in the many different contexts in which apprentices work and learn. Establish a panel of learning and assessment experts to advise employers and providers in England.

3 PROVIDE ACCESSIBLE GUIDANCE FOR EMPLOYERS AND PROVIDERS ABOUT THE PEDAGOGY OF APPRENTICESHIPS

Develop best practice guides about the teaching and learning methods which are most suited to different apprenticeships with those most closely involved in creating and delivering new occupational standards.

4 EXPLORE WAYS OF EMBEDDING AN EMPHASIS ON LEARNING INTO THE DOCUMENTATION OF APPRENTICESHIPS

Ensure that future Government documents about apprenticeships include explicit reference to pedagogy. Consider a more ambitious use of apprentices' Individual Learning Plans as a means of improving the quality of the apprentice experience.

5 LEAD AN INTERNATIONAL DEBATE ABOUT APPRENTICESHIP LEARNING

Raise the status and quality of apprenticeships nationally and globally by exploring common issues. Share best thinking from across the world with regard to the learning sciences, the use of technology and changing patterns of employment.

2 INTRODUCTION AND HISTORY

‘We want this to be a radical reform programme that will make apprenticeships in England the best in the world.’

Department for Business, Innovation and Skills, 2013

Apprenticeships in England have a long and rich history stretching back to the Middle Ages. The term ‘apprenticeship’ has two related meanings. It is a paid route to a trade, craft or profession; a blend of on-the-job training in the workplace and learning in the ‘classroom’. As such an ‘apprentice’ has a distinct meaning as does ‘apprenticeship’ with expectations as to skills learned, roles played and time taken. But it can also be used in a more general sense referring to the tried-and-tested way of learning whereby a novice learns anything from someone who is more skilled than them. In this second sense it is virtually a synonym for ‘learning’.

Over the years the popularity of apprenticeships (in its first meaning) has varied while our understanding of learning methods (the second meaning) continues to grow. Currently interest in the apprenticeship pathway is high from most political parties in England and across the world. The number of apprenticeships in England continues to increase. In 2012/13, for example, there were 510,000 apprenticeship starts in England, and a small majority (55%) were female.

The *Richard Review* (2012) in England, commissioned by the Department for Business, Innovation and Skills (BIS), makes comprehensive proposals about how apprenticeships can be improved, encompassing:

... the redefining of an apprenticeship, the role of the employer in setting the standard, the simplification of the system to one standard or qualification per occupation, the freeing up of the curricula and of teaching methods, the robust testing of the accomplishment, the funding of apprenticeship training and the generation of demand and supply.

Our own report, *How to Teach Vocational Education: A theory of vocational pedagogy* (Lucas, Spencer and Claxton, 2012), made an argument that, in order to improve the quality of teaching and learning, it is important to have a better and more nuanced understanding of pedagogy – the choices which teachers take about learning methods with the students they teach.



In 2013 the Commission on Adult and Vocational Teaching and Learning (CAVTL) raised expectations with regard to really understanding pedagogy in vocational education. It suggested some core principles, arguing that:

We need to strengthen and make more visible the distinctive pedagogies of vocational teaching and learning. (McLoughlin, 2013)

As numbers of apprentices are increased it is essential that we do not become distracted by the bureaucracy which inevitably surrounds any kind of Government-led reform. Specifically we need to:

- ensure that the concept of apprenticeships is powerful and rich enough to hold its own in a crowded field of post-16 education that includes colleges, training providers, professional bodies and universities, with both adequate breadth and reliable depth;
- take what we know about vocational pedagogy and apply it reliably across sectors to ensure that apprenticeship learning is of the highest possible quality and that apprentices are developed to their full potential.

While apprenticeships are a ‘timeless’ concept – relevant across the ages – they are also ‘timely’ in this day and age. Although it is likely that apprenticeships were common before they were documented formally, the first time they are mentioned appears to be about 1230. The table opposite shows just a few of the key dates in the history of this important idea.

Table 1: Key dates in the evolution of apprenticeships in England

TIME PERIOD	SOME SIGNIFICANT DEVELOPMENTS IN THE HISTORY OF APPRENTICESHIPS
1200s	<ul style="list-style-type: none"> ● Apprenticeships are first mentioned in certain statutes of the City (c1230)
1300s	<ul style="list-style-type: none"> ● Apprentices (or the term ‘apprenticeship’ at least) are viewed in the same way as chattels
1400s	<ul style="list-style-type: none"> ● Regulations as to the physical fitness of apprentices first appear
1500s	<ul style="list-style-type: none"> ● Elizabethan Statute of Artificers lays out terms and conditions for training (1563). Traders could only practise a trade or craft after serving a seven-year apprenticeship
1600s	<ul style="list-style-type: none"> ● Apprentices are typically 18 years old around 1600 (and by 1800 they are nearer 15)
1700s	<ul style="list-style-type: none"> ● Official records of apprentices are kept in England and Wales between 1710 and 1811, when stamp duty was payable on indenturing of apprenticeships ● The industrial revolution begins to create demand for mass education (1775)
1800s	<ul style="list-style-type: none"> ● Apprenticeships expand beyond traditional trades to engineering and shipbuilding ● Great Exhibition reveals a lack of facilities for technical education in England (1851) ● National system for technical education created by the City of London and 16 Livery Companies (1878)
1900s	<ul style="list-style-type: none"> ● The City of London and Livery Companies receive their Royal Charter as the City and Guilds of London Institute (1900) ● Industrial Training Act (1982): sets up a regulatory framework for industrial training boards enabling it to open and close them ● Modern Apprenticeships scheme addresses skills shortages in the UK (1994) ● Modern Apprenticeships expanded to 82,000 places (1999)
2000s	<ul style="list-style-type: none"> ● Learning and Skills Act establishes Learning and Skills Council for England (2000) ● National Apprenticeship Service created (2008) ● Apprenticeships, Skills, Children and Learning Act (2009): creates statutory framework for apprenticeships ● Reforms into apprenticeships set a minimum of number of learning hours and seek to simplify their design, giving more responsibility to employers (2012)

3 APPRENTICESHIPS FOR THE 21st CENTURY

'I passionately believe that in the twenty-first century it is possible to think differently about apprenticeships, to act differently in how they are implemented, and ultimately to make them as ubiquitous as the iPod.'

Tom Bewick, International Skills Standards Organisation, 2014

As England, in common with most countries across the world, seeks to develop more apprentices, it may be helpful to remember a number of important things:

- ▶ **While an increase in quantity may be desirable in the short term,**
unless apprenticeships as a concept are associated with quality, they will never become a pathway of choice.
- ▶ **While it is encouraging that employers are embracing apprenticeships across both white and blue collar industries,**
we wish to create a better understanding of the key aspects of an apprenticeship in terms of input, content, level and length. This must also value other pathways, routes and training programmes which feed into apprenticeships leading to valued skills acquisition and creation of jobs.
- ▶ **While simplifying structures and putting employers in the driving seat is essential,**
organising learning for an apprentice is a complex activity which requires an understanding of vocational pedagogy.
- ▶ **While it is helpful to think of different levels of apprenticeships, perhaps even to 'package' them differently,**
it is most important that there is good progression throughout the apprenticeship system and beyond.
- ▶ **While rigorous assessment is important for the external validity of apprenticeships,**
many of the capabilities valued by employers are not readily susceptible to end of apprenticeship testing.
- ▶ **While knowledge and skills are both important,**
so too are a broader set of employability attributes or habits of mind. Knowledge is easier to assess than skills, which in their turn are easier to assess than dispositions. Yet too much emphasis on the easiest of these three to assess – knowledge – leads to apprentices who cannot perform in the real world of work.
- ▶ **While some apprenticeships are beginning to embrace technology,**
not enough are with regard to both seamless or blended learning and e-assessment.
- ▶ **While it is an attraction of apprenticeships to individual learners that they are paid, albeit low-paid, workers,**
the pay itself is only one motivator. The broader learning and working environment needs to be geared to provide them real learning with skilled teachers/coaches/mentors/guides/trainers.
- ▶ **While all apprenticeships offer apprentices some learning,**
too many offer a small amount over a short length of time. They run the risk of both tarnishing the reputation of apprenticeships, and making England look poor in international comparisons. It is only recently that minimum hours and a minimum timescale for apprentices have been established in England.

In this report we are seeking to put the learning back into apprenticeships and invite employers, providers, professional bodies, apprentices and policy-makers to consider the ways in which such an attempt might help improve the quality of apprenticeships.

In the table below there is an overview of what we see as the essential features of apprenticeships which we then explore in more detail in terms of pedagogy in this summary report.



Table 2: Outcomes, key features and learning methods for a pedagogy of apprenticeships

SIX DESIRABLE OUTCOMES

- Routine expertise
- Resourcefulness
- Craftsmanship
- Functional literacies
- Business-like attitudes
- Wider skills for growth

THREE KEY FEATURES

- Learning on- and off-the-job
- Learning from and with others
- Visibility of processes

LEARNING METHODS THAT WORK

- Watching
- Imitating
- Listening, transcribing and remembering
- Trial and error, experimentation or discovery
- Deliberate practice
- Drafting and sketching
- Assessment for learning
- Teaching and helping
- Conversation
- Reflecting
- Being coached and mentored
- Real-world problem-solving
- Making
- Individual or collaborative enquiry
- Thinking critically and producing knowledge
- Competing
- Simulation and role play
- Games
- In virtual environments
- Seamlessly blending virtual with face to face
- On the fly



4 THE PEDAGOGY OF APPRENTICESHIPS

‘Learners must demand high quality pedagogy which will necessitate that stronger links are built between employers, teachers and teaching.’

Department for Business, Innovation and Skills, 2014

The pedagogy of apprenticeships – the art, science, craft and nous of teaching and learning for apprentices – cannot be considered in the abstract. Before we can seek to suggest those learning methods which will best suit different occupations we have to ask and answer a more fundamental question – pedagogy for what? What are the desired outcomes of apprenticeships in the 21st Century?

4.1 SIX OUTCOMES OF APPRENTICESHIPS

As Table 2 on page 9 shows, we propose the following six outcomes – routine expertise, resourcefulness, craftsmanship, functional literacies, business-like attitudes and wider skills for growth.

4.1.1 ROUTINE EXPERTISE

Learning how to become routinely expert at something is at the heart of apprenticeships. At the time of writing, there are 233 current frameworks in England (Apprenticeship Frameworks Online, 2014) each of which has many different aspects of routine expertise or skill. Apprentices clearly need to be able to do the job for which they have been trained and demonstrate their routine expertise. Challenges to developing routine expertise in apprentices include:

- adequate opportunities to practise and the motivation of the learner to keep practising until the skill has become routine
- the availability of an ‘expert’ teacher/coach
- the skill of the ‘expert’ as a ‘teacher’, especially their ability to articulate the important steps of a process and make tacit processes ‘visible’.

4.1.2 RESOURCEFULNESS

This desirable outcome is about being able to deal with the non-routine and unexpected. While reliable skill is essential, in most workplace situations things happen which are beyond the routine. As apprentices progress, they will need to be able to stop to think and draw on resources other than their own knowledge of the routine. Challenges to developing resourceful apprentices include:

- having adequate opportunities and time to practise skills in unfamiliar settings
- being allowed to develop a higher-order capability when there is an emphasis on productivity
- having an expert teacher to suggest resourcefulness strategies.

4.1.3 CRAFTSMANSHIP

Craftsmanship involves an unambiguous aspiration in an individual for excellence. With it comes the sense of pride in a job well done. The idea of craftsmanship is central to apprenticeships and was at the heart of the medieval forms of apprenticeships in England. In Germany the term ‘*meister*’ carries this meaning. For Richard Sennett, author of *The Craftsman* (2009), the desire to do a job well for its own sake is a basic human impulse. Everyone, he argues – the computer programmer, the doctor, the parent and the citizen – can put into practice the values of craftsmanship. Matthew Crawford (2009) and Mike Rose (2004) similarly explore the satisfaction and pleasure individuals derive from the cognitive aspects of a job well done. The challenges to developing craftsmanship in apprentices include:

- the perceived opportunity/cost trade-off of doing a job fit for purpose, and doing a job perfectly with deadlines looming
- peer pressure from other apprentices for learners not to appear too ‘pedantic’ and the availability of good role models
- employers who may be more concerned with profit than with quality and potential wastage of material if something isn’t ‘quite right’.

4.1.4 FUNCTIONAL LITERACIES

As well as being functionally literate in numeracy, literacy and ICT, apprentices also need a level of graphical and digital literacy. In England in 2012, Functional Skills became a mandatory part of all apprenticeships frameworks, replacing what were known as Key Skills. The role of Functional Skills has been further complicated by the latest requirement for all 16–19 learners to study towards GCSE/Level 2 maths and English if they have not already achieved a GCSE A*–C in these subjects. There remains ongoing debate about the place of academic or applied approaches to teaching and assessing functional literacies.

Developing apprentices’ functional literacies brings some real challenges including:

- the small amount of day release time and guided learning hours available to apprentices
- the availability of appropriately skilled staff in the workplace and off-the-job trainers to support the authentic development of Functional Skills
- the ability of workplace staff to identify and articulate the Functional Skills they are using.

4.1.5 BUSINESS-LIKE ATTITUDES

This desirable outcome is about dealing with clients, suppliers and customers appropriately. Another word for it might be 'professionalism', a way of behaving, whatever your occupation. To act appropriately in the world of business, whether for or not-for-profit, is an essential requirement of any apprenticeships. Developing business-like skills in apprentices brings some real challenges including:

- ensuring that the definition of business is set expansively to include both basic self-organisation and higher level communication and work skills
- deciding which sorts of business-like attitudes and skills count as important
- providing opportunities for learners to develop if they are rarely client-facing.

4.1.6 WIDER SKILLS FOR GROWTH

Across the world 'wider' skills are known by different names such as 'dispositions', 'attributes', 'capabilities' and so on, each one of which comes with a slightly different emphasis. As well as at work, apprentices need to be able to thrive at home and in the community. Within apprenticeships in England the Personal, Learning and Thinking Skills (PLTS) required at Levels 2 and 3 are helpful. The Confederation of British Industry (CBI, 2012) has recommended that we should go further – clarifying what these wider skills are and measuring them. When developing wider skills for growth in the workplace it is worth considering:

- balancing the needs of the apprentice as a learner and the requirement for him/her to be productive as a worker with reference to particular sectors and organisations
- finding ways of assessing skills that go beyond the more routinely assessed tests of knowledge, physical control, manual dexterity or mental facility
- ensuring that qualified and experienced employees and teachers model the skills required.

4.2 THREE KEY FEATURES OF APPRENTICESHIPS

These are:

- 1 The fact that they require both **on- and off-the-job learning**
- 2 Their social context – that they require **learning from and with others** within a community of practice (Lave and Wenger, 1991)
- 3 The requirement for **visibility of learning processes** – as an integral aspect of the first two and as an increasingly acknowledged feature of effective learning wherever it takes place.

4.2.1 ON- AND OFF-THE-JOB LEARNING

Apprentices learn both on-the-job through their employer and off-the-job at a college or with a learning provider, with the bulk of their learning importantly located within a workplace. Ofsted has summarised some on-the-job learning activities which are valuable:

... formal and informal training; placements within and outside the company to obtain experience and assessment evidence; mentoring by colleagues; attendance at trade shows; visits, participation in competitions, and manufacturer training. May include learning support visits. (Ofsted, 2010; p2)

The critical issue in terms of ensuring effective learning within an apprenticeship is the degree to which those responsible for the on-the-job elements talk to and understand those who provide the off-the-job learning. One mechanism which might provide a focus for such conversations is the Individual Learning Plan (ILP), the record of all the elements of an apprentice's planned learning. An ILP can be a very dull document full of little more than previous exam results and dates of specific courses. But it could be much more powerful as a prompt for desired activities (such as mentoring and coaching) and a reflective space for learners to plan and review on their experiences.

4.2.2 LEARNING FROM AND WITH OTHERS

Communities of practices and of learning are an essential element of all apprenticeships. In some larger workplaces there will be a number of apprentices, where in a small business there might be just one. But even if the apprentice is alone she or he will necessarily be learning and working with others. Such collaborative learning comes naturally to apprentices. Colleges, training providers and employers can all facilitate the process of learning from and with others.

4.2.3 VISIBILITY OF LEARNING PROCESSES

In the last decade we have begun to understand the relationship between quality of outcomes and learning in which the processes are clearly visible to learners and teachers. John Hattie highlights four features of high quality learning in *Visible Learning* (Hattie, 2009):

- The learning arising from any learning experience is given explicit attention in the moment.
- Learners have specific, challenging, practical, goals in mind and learning tasks are constructed with those goals in mind so that they are beneficial.
- Feedback is clear and plentiful. Learners recognise the need to welcome and listen to feedback.
- Teachers recognise learners' self-concepts and are fully able to coach them to develop improved learning dispositions and strategies.

Each of the features above requires all those involved to be actively involved in making the processes of learning visible, all being able to give a precise name to what is happening in terms of an apprentice's learning.

4.3 LEARNING METHODS THAT WORK FOR FURTHER AND VOCATIONAL EDUCATION

On page 9 we offered a long list of methods which are appropriate to apprenticeships. Some methods will be more likely to lead to one or more our desired six outcomes. Different apprentices in varying contexts learning contrasting occupations will require those orchestrating their learning to make considered choices to ensure that the experience is of a high quality. Here, in 4.3.1–4.3.9, we group the methods we listed in Table 2 into 9 clusters for ease of comparison. In our full report we explore these methods in much greater detail.

4.3.1 LEARNING FROM EXPERTS

By watching and imitating and by listening, transcribing and remembering.

We learn by watching and trying first to work out what someone is doing and then to try it out ourselves. Such learning is at the heart of the medieval apprentice model, where novices watch experts, just as it is also at the heart of learning that takes place within family groups.

4.3.2 PRACTISING

Through trial and error, experimentation or discovery and deliberate practice.

Human beings have always learned well by experiencing things at first hand. Generally referred to as experiential learning (Kolb, 1984) this cluster of methods assumes that we learn well when we can combine both theory and practice. Trial and error responds to our natural human motivation to be curious. Deliberate practice is a particular kind of practising involving a focus on improving particular tasks, (Ericsson, 2008).

4.3.3 HANDS-ON

By making, by drafting and by sketching.

If writing about and talking about skills and knowledge is the default way of operating in general ‘academic’ subjects, hands-on learning is its parallel default setting in vocational education. Of course not all apprenticeships involve physically making things. But ‘hands-on’ has a more general meaning here implying that the learning is ‘first hand’ wherever possible.

4.3.4 FEEDBACK FOR LEARNING

Using assessment for learning approaches, through conversation, by reflecting and by teaching and helping others.

Feedback for learning is any communication whose emphasis is on understanding and improving the processes of learning. Feedback is information provided by someone to a learner on an aspect of their performance and is essential to all kinds of learning. Feedback is seldom neutral, providing as it does, information about the values and attitudes of the feedback giver as well as on the person or task. John Hattie and Helen Timperley (2007) have helped us to see that there are essentially three core questions informing effective feedback: Where am I going? How am I doing? Where to next?

4.3.5 ONE-TO-ONE

By being coached and by being mentored.

One-to-one interactions enable apprentices to develop the right attitudes, knowledge and skills in the context of a trusted relationship and where the focus is on them as an individual learner. Coaching is where two individuals meet regularly to reflect on progress and work on aspects of performance. Mentoring, also a relationship between two people, tends to focus on career transitions and progression and is normally provided by a more experienced and expert worker.

4.3.6 REAL-WORLD LEARNING

By real-world problem solving, through personal or collaborative enquiry and by thinking critically and producing knowledge.

Real-world learning recognises that the workplace is more like the real world than a classroom. In the real world you encounter challenges, ask and answer questions, engage your critical faculties and use your creativity or nous to solve problems. Many apprentices choose the route precisely because it appears to offer the prospect of real-world learning. Real-world problem solving requires apprentices to be able to identify problems and have a range of strategies to find solutions, both working as an individual and in a team, thinking critically as they do so.

4.3.7 AGAINST THE CLOCK

By competing, through simulation and role play and through games.

Learning against the clock is real and important in the sense that, in any workplace, deadlines will be important. But, by contrast, really deep learning transcends time, inviting engagement which is more than timetabled lessons or sessions. Apprenticeship learning is, by definition, a kind of learning against the clock as the apprenticeships have a specified overall time and within that, specified learning hours. Simulations and games provide opportunities for apprentices to explore contexts which otherwise not be available to them. Constructive competition is increasingly being seen as a way of developing the skills of apprentices, especially those most skilled.



4.3.8 ONLINE

Through virtual environments and seamlessly blending virtual with face to face.

Online learning unleashing the power of the internet is growing in importance and sophistication. As a cluster of methods, 'online' sits apart from the others we have listed so far, being a means of delivering many of the other methods. For example, learners do not learn simply by 'being online'. They learn through 'watching' while online, or 'thinking critically' while online.

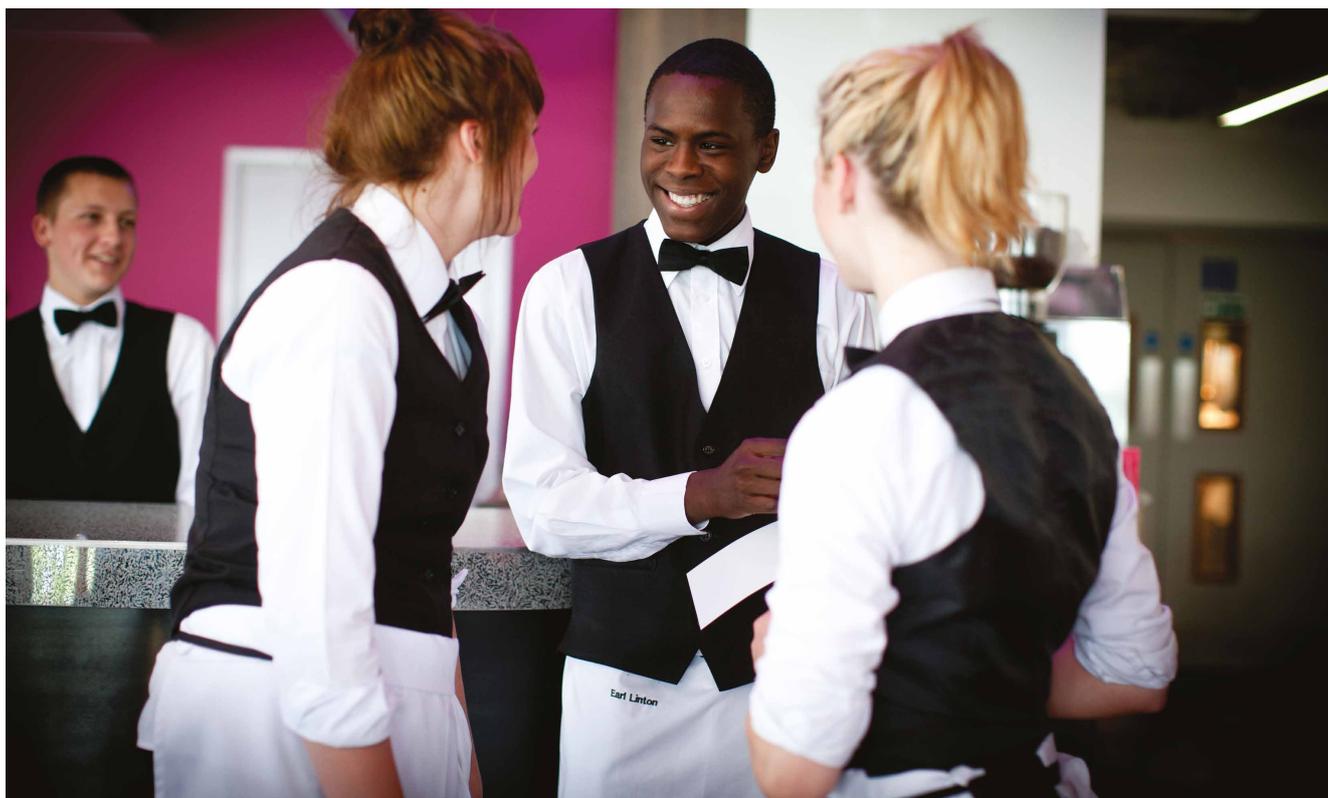
An exciting aspect of online learning is being driven by a new approach to online assessment – Open Badges (Mozilla, 2014). Arguably a development of what groups such as the Cubs, Scouts and Guides have been doing with their physical badges sewn on to an item of clothing, Open Badges are virtual celebrations of learners' successes and they grow out of a longstanding commitment to the use of portfolios and records of achievements in many walks of educational, design and professional life. An Open Badge is an example of assessment as learning and offers some interesting opportunities for use with apprentices.

4.3.9 ANYTIME

On the fly.

This last category is a simple reminder that much of what apprentices learn is not planned, stressing instead the need for them to be ready to learn. 'On the fly' learning is unplanned and informal, the result of an unexpected occurrence from which something can be gleaned. Sometimes it is these on the fly moments – an unexpected conversation with a visitor, equipment which does not work and forces a rethink, a chance encounter, an exchange on social media – which provide apprentices with useful know-how.

5 APPRENTICESHIPS FOR THE REAL WORLD



‘A key goal should be to ensure apprentices ... have the status of *learners* – something that would be supported by a change in the legal definition of an apprentice from an employee to a special status that guarantees the right to high-quality off-the-job training.’

Tony Dolphin and Tess Lanning, 2011

Throughout *Remaking Apprenticeships* we have tried to look at the ways in which while apprenticeships are a contract of employment, for them to be successful they really have to be an agreement about learning. Although the details of assessment and funding are of huge importance, just as are the respective roles of government, employers, providers and professional bodies, it is the processes of learning – the pedagogy of apprenticeships – which is too often ignored.

We agree with Alison Fuller and Lorna Unwin’s notion of expansive apprenticeships (2008) which suggests how workplaces can be configured to promote learning. In our full report we explore the practical ways in which our aspirations for apprentices as learners can realistically be incorporated into busy work environments.

We end on a confident note about the contribution which the ‘learning sciences’ can make to developing high-quality apprenticeships across the world.

Learning sciences is an interdisciplinary field that studies teaching and learning... The goal of the learning sciences is to better understand the cognitive and social processes that result in the most effective learning, and to use this knowledge to redesign classrooms and other learning environments so that people learn more deeply and more effectively. (Sawyer, 2008; p1)

The learning sciences could offer specific suggestions for improving every aspect of an apprentice’s learning including, for example, helping him or her learn how to:

- set stretching goals
- ask better questions
- practise more efficiently
- develop a growth mindset and resilience
- give and receive feedback
- learn more effectively online
- reflect and adapt

In summary this report highlights an often overlooked element of effective delivery of apprenticeships and one that is within reach of all involved in their support – the appropriate use of learning strategies. With relatively little disruption or upheaval to existing structures the model of apprenticeships pedagogy could change for the better. In our full report we present tangible guidance based on, and referenced back to, lessons learned from our heritage. It would seem sensible to at least consider what could be remade in the apprenticeship offer of the 21st Century.

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