Edge Future Learning
Our principles for deeper learning
June 2019
Foreword

The extraordinary pace of the technological revolution is creating an unparalleled demand for technical, professional, creative and digital skills.

Our economy is suffering from profound skills shortages that will be compounded by Brexit. Employers anticipate recruitment challenges stretching a decade ahead. Ironically, to prepare young people for this brave new – and largely unknowable - world, we give them a narrow academic curriculum designed in 1904 and train them by rote learning. This education is the very antithesis of the invention, ingenuity and imagination that this century demands. The answers to today’s global issues – climate change, sustainability, social equity, globalisation, air pollution – can’t just be looked up in a text book.

There is another way.

Education can no longer just be about the retention of knowledge. It has to enable young people to become resourceful, resilient and equipped to negotiate not just the rapidly changing workplace, but also the wider world.

We know this can be done because our team has spent the last two years visiting inspirational schools and colleges across the world to understand and learn more about what works best. We have seen students engaged in exciting projects that break down the barriers between individual subjects, mixing science with art or history with physics, providing a much richer and more engaging educational experience. We have seen teachers working in partnership with local businesses to develop a curriculum that makes learning relevant to the world of work. We have seen parents and community groups given the opportunity to contribute, while pupils work towards public exhibitions of their beautiful and imaginative professional work.

The Edge Foundation has been able to bring the very best features of these international education systems to the UK. Working initially with a small number of schools and colleges around the country, we are already making a real difference to the educational experience and future life chances of hundreds of young people.

We want to go further.

We believe all young people are entitled to an education which will equip them with the skills and aptitudes for this century and beyond. That is why we have brought together everything we have learned into our principles of deeper learning and we look forward to sharing them with you.

Neil Bates
Chair of the Edge Foundation
Employers are crying out for people with technical, professional, creative and digital skills. Meanwhile education policy continues to focus on training children to pass old fashioned written examinations in a narrow range of academic subjects.
We have looked at the best models in the world for school transformation. From the UK to the US to Australia, they share common ingredients – bringing relevance to the classroom, connecting employers and community organisations to schools and colleges. Edge Future Learning brings all of this evidence and practice together to help schools and colleges to benefit from leading practice across the world.

Alice Barnard, Chief Executive, The Edge Foundation

We wanted to help schools to support their students to develop the skills that employers here in the North East tell us they need, like teamwork and problem solving. We also wanted to help them to find ways to integrate relevance to the real world into the curriculum to motivate all pupils. So we immediately saw the appeal of working with Edge and Ford NGL to establish a hub here in the North East LEP area.

Michelle Rainbow, Skills Director, North East LEP

We went across to Nashville and I was very sceptical that this was possible. We saw out there something that we have been able to come back and use as a framework to challenge what we are doing. This is a way of really changing the lifeblood of our school. It has been transformational.

David Baldwin, Head Teacher, Churchill Community College

What this process has allowed us to do is truly bring the community to the table. It has been inspirational to see pupils and parents working with employers and community groups to discuss what skills and attributes are needed. On the days that project based learning takes place, attendance is excellent and the behaviour incidents that we log are lower on those days. It really is having an impact.

Claire Goodwill, Principal of Milburn School, Excelsior Academy
I think it’s fantastic. There’s not enough engagement with schools at the moment. This is a great opportunity for us to be able to get into schools and let them know what’s out there.

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Keith Robertson, Training Manager, Go NorthEast

As Deputy Head of our primary school, the work I do with project based learning has enabled me to develop a similar approach at secondary level – making links between subjects and bringing them to life. Collaboration with employers has strengthened this further. It has really reinvigorated the teachers involved – their excitement is infectious.

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Hannah Williamson, Head of PBL, Excelsior Academy

When you see how the kids are reacting it’s amazing. My daughter’s been doing it since September and her confidence is just getting bigger. She’s really enjoying it. The knock on effect of three hours a week of project based learning is unreal.

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Rachel Turner, Parent

It also makes you feel like you’re having an impact on the world and that you’re more important than people thought you were. It brings up pride in people.

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Alyssa, Pupil
Our principles for deeper learning

1. The challenges facing our economy and society

We are living through a unique period in which three fundamental factors are affecting our economy and society at the same time – skills shortages, Brexit and the Fourth Industrial Revolution. Our termly Skills Shortage Bulletins paint a stark picture of the challenges that we are facing.

**SKILLS SHORTAGES**

It is clear that there are large and growing skills shortages across the UK economy. The Department for Education’s own Employer Skills Survey (ESS) shows that the number of skills shortage vacancies has risen dramatically from 91,000 in 2011 to 226,000 in 2017.¹ The highest densities of skills shortage vacancies can be found in construction, utilities, transport, manufacturing and information/communication, and in particular within skilled trades.
The challenges facing our economy and society:

Over the last 12 months the surveyed employers have incurred the following costs:

- Additional recruitment costs: £1.23 billion
- Increasing salaries on offer: £2.16 billion
- Training those hired at a lower level: £1.45 billion
- Temporary staffing: £1.49 billion
- TOTAL COST: £6.33 billion

The impact of these skills shortages is also very clear – 85% of the businesses surveyed said that they increased workload for other members of staff, 48% that they resulted in difficulties meeting customer needs and 43% experienced increased operating costs and loss of business to competitors. As a result, more than two-fifths of businesses (41%) had to spend more than anticipated on the recruitment process. The Open University estimate the total annual direct cost to the UK economy at £6.3 billion.

Equally important is the high social cost – while hundreds of thousands of job vacancies remain unfilled, the number of unemployed 16-24 year olds in the UK in February 2019 stood at 493,000.
BREXIT
One factor that has been restraining the size of skills shortages is the ability of firms to fill these roles with migrants from the EU. The government’s own Employer Skills Survey shows that 38% of businesses facing skills shortages tried to recruit non-UK nationals to fill the roles. Of these, 90% of firms had looked to recruit from the EU. Research by the British Chambers of Commerce (BCC) shows that 38% of their members said that future restrictions on the rights of EU nationals to work in the UK would have a negative impact on their business.5

THE FOURTH INDUSTRIAL REVOLUTION
The number and nature of jobs are changing at an unprecedented rate, which will accelerate in the coming years. In our report, *The Digital Revolution*,6 we pointed to the significant effect that the fourth industrial revolution will have on the job market and in particular the ‘hollowing out’ of mid-level jobs such as those in manufacturing and general administration. Latest analysis by the Office for National Statistics suggests that 1.5 million jobs are at high risk of automation and that these are held disproportionately by women and younger workers.7

Latest research from the World Economic Forum8 shows that the vast majority of employers surveyed expect that, by 2022, the skills required to perform most jobs will have shifted significantly. Worldwide, there is an average shift of 42% in workforce skills over the 2018-22 period. By 2022, no less than 54% of all employees will require significant re- and upskilling. Of these, within the UK about 36% are expected to require training of up to six months, while 9% will require additional skills training of more than a year.

![Average reskilling needs](chart.png)

*The evidence strongly points to large and widening skills shortages in the economy, which will be exacerbated by any real or perceived restrictions on migration. Meanwhile the nature of jobs, and therefore the skills required, will continue to change rapidly over the coming decades.*
2. How education policy is failing to address these challenges

**The skills employers need**

Employers are clear that what they need to address these challenges is individuals with the **transferable employability skills that enable them to thrive in any work environment**. Fewer than half of employers (46%) say that academic qualifications are significant or critical when hiring, compared to almost two-thirds (65%) for relevant work experience.9

In the CBI’s annual education and skills survey, businesses made clear that the **biggest drivers of success for young people were attitudes and attributes** – while 86% rated attitude and 68% aptitude as a top attribute, just 34% said the same of formal qualifications.10 The two sets of skills identified as lacking were:11

- **Technical and practical skills** – these are the specific skills required to perform the functions of a job role.

- **People and personal skills** – these are the ‘softer’, less tangible skills required to manage oneself and interact with others in the workplace.
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Edge’s analysis with Education and Employers and the National Education Union\(^1\) of the myriad of recent surveys at home and abroad sets out a **definitive picture of the skills and behaviours that employers are looking for to fill the skills shortages**:

Looking to the future, this is reinforced by recent work by the World Economic Forum\(^2\) which shows that in the coming years, **trending skills will include creativity, problem solving and emotional intelligence** while declining skills will include memorisation.

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<thead>
<tr>
<th>Today, 2018</th>
<th>Trending, 2022</th>
<th>Declining, 2022</th>
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<tbody>
<tr>
<td>Analytical thinking and innovation</td>
<td>Analytical thinking and innovation</td>
<td>Manual dexterity, endurance and precision</td>
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<tr>
<td>Complex problem-solving</td>
<td>Active learning and learning strategies</td>
<td>Memory, verbal, auditory and spatial abilities</td>
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<td>Critical thinking and analysis</td>
<td>Creativity, originality and initiative</td>
<td>Management of financial, material resources</td>
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<td>Active learning and learning strategies</td>
<td>Technology design and programming</td>
<td>Technology installation and maintenance</td>
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<tr>
<td>Creativity, originality and initiative</td>
<td>Critical thinking and analysis</td>
<td>Reading, writing, maths and active listening</td>
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<tr>
<td>Attention to detail, trustworthiness</td>
<td>Complex problem-solving</td>
<td>Management of personnel</td>
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<tr>
<td>Emotional intelligence</td>
<td>Leadership and social influence</td>
<td>Quality control and safety awareness</td>
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<td>Reasoning, problem-solving and ideation</td>
<td>Emotional intelligence</td>
<td>Coordination and time management</td>
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<tr>
<td>Leadership and social influence</td>
<td>Reasoning, problem-solving and ideation</td>
<td>Visual, auditory and speech abilities</td>
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<td>Coordination and time management</td>
<td>Systems analysis and evaluation</td>
<td>Technology use, monitoring and control</td>
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How education policy is failing to address these challenges

**The English Education Policy Response**

As we set out in our report *14-19 Education: A New Baccalaureate*, the current focus of the curriculum through the EBacc and Progress 8 tries to **address the challenges of Twenty-First Century skills using a late Nineteenth-Century approach to education.**

It is right that young people have access whilst at school to the rich treasury of our history, geography and literature, but the government’s focus on a ‘knowledge-rich’ curriculum at the expense of all else goes in the opposite direction from the skills required by employers and the economy.

The prioritisation of EBacc subjects has **decimated entries in Design and Technology and creative subjects** at GCSE over the last eight years. There have even been falls in entries to the computer-based subjects (ICT and computing) that will be crucial in the fourth industrial revolution. Between 2010 and 2018, there was a fall of 154,000 (57%) in entries to Design and Technology GCSE and a reduction of 77,000 (20%) in entries in creative subjects. In computer-based subjects, there was a fall between 2016 and 2018 of 17,000.15

By refocusing assessment on high pressure end-point exams with very high knowledge content and placing so much emphasis on the results in performance tables, the system is forcing staff to focus on teaching for these tests. Evidence from the National Education Union suggests that **80% of teachers have seriously considered leaving the profession in the last 12 months.**

The evidence shows that employers are clear about the skills they need to address the shortages set out in Chapter 1, with a particular focus on technical and transferable skills. By contrast, current education policy promotes a narrow academic curriculum focused on memorising facts for high pressure end-point exams.
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3. Finding a real solution

The changing tide
Despite the challenges of current policy (Chapter 2), there is some evidence that the tide is beginning to change. The Gatsby Good Careers Guidance Benchmarks have been enshrined in statutory guidance and set a clear expectation (Benchmark 4) that all teachers take responsibility for linking careers learning to their curriculum area.

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<tr>
<td>A STABLE CAREERS PROGRAMME</td>
<td>LEARNING FROM CAREER AND LABOUR MARKET INFORMATION</td>
<td>ADDRESSING THE NEEDS OF EACH PUPIL</td>
<td>LINKING CURRICULUM LEARNING TO CAREERS</td>
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<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
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<tr>
<td>ENCOUNTERS WITH EMPLOYERS AND EMPLOYEES</td>
<td>EXPERIENCES OF WORKPLACES</td>
<td>ENCOUNTERS WITH FURTHER AND HIGHER EDUCATION</td>
<td>PERSONAL GUIDANCE</td>
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Meanwhile, the new Ofsted framework that will come into place in September 2019 points the way to valuing breadth within the curriculum, as Amanda Spielman has said: In the long run, a renewed focus on curriculum should reverse the current incentives that come from inspection being quite so focused on outcomes. Even the Russell Group has moved away from its narrow ‘facilitating subjects’ towards a much broader focus on informed choices. Most importantly, at grassroots level in schools and colleges many head teachers and principals are already developing and implementing innovative curriculums and approaches that they know will prepare their students for the future. The Edge Foundation set out to find the most effective models worldwide to help them to do so.
THE TRANSFORMATION OF NASHVILLE’S SCHOOLS
In 2016, Edge visited Nashville to see the work that had been done to transform education in their high schools over the last decade.

THE ACADEMIES OF NASHVILLE
In 2005, the city of Nashville had a high school graduation rate of just 58% and businesses were not getting the skilled individuals they were looking for. In the words of Melissa Jaggers, President of Alignment Nashville, we knew it wasn’t time for tweaks, it was time for wholesale change. That is exactly what they embarked on, led by the business community in partnership with the school board. They focused on:

- Providing transferable skills
- Making learning relevant to real life
- Involving employers and the community
- Training teachers in this new way of delivering

Providing transferable skills
In the 9th Grade (age 14) there is a strong emphasis on academic learning, but they also focus explicitly on transferable skills, such as team working and problem solving. These continue to remain a key focus throughout the rest of their time at school.

During their freshman year, students also have time and support to investigate and explore their career options through presentations from older students, careers fairs, job exploration and college visits.

Making learning relevant
After their first year, young people have the opportunity to choose a career academy (a school within a school focused on a particular sector) that will provide the context for their studies in the remaining three years of high school – there are around 40 across Nashville with two to four in each school, from automotive design to health management or digital communications.
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Students engage in a series of structured employer engagements in their sector, from job shadowing to internships to developing a ‘capstone project’ for a real employer in their final year. Their academy also provides the lens through which their subjects are taught – depending on their academy, young people may learn about mathematical formulae from an aviation engineer or English comprehension through the lens of researching a court case with a local lawyer.

Setting learning in the context of real life examples in this way makes it more relevant and helps young people to see the links between school and the world of work.

Involving employers and the community
Local employers have led the transformation from the beginning and they continue to take a leading role in delivery. Their CEOs work closely with the Superintendent of Schools to set the direction and their businesses pledge tens of thousands of volunteer hours every year.

Within the schools, individual employers are directly involved in setting projects for students as well as providing exciting workplace experiences. It is common to see staff from local businesses working alongside teachers in the classroom.

Training teachers
Teachers are given time to plan lessons during the school week, both individually and as a group, developing cross-curricular projects that bring together a number of disciplines. They receive training in key areas such as project based learning, as well as ongoing mentoring and opportunities for personal development.

Over the summer, teachers have the chance to spend a few days together on an externship with an employer, keeping their experience current and bringing back a cross-cutting project for pupils to work on over the coming year.

DONNA GILLEY, Director of the Academies of Nashville

*Young people need to spend significant time working with employers to understand the range of career options and develop employability skills. Every day I see the transformational effects that happen when young see the relevance of what they are learning to the real world.*

*In my experience kids put up their hand in high school for two reasons. Either they need the bathroom or they want to ask ‘when will I ever need this’. If we can’t answer the second question, we may as well stop the lesson. When we can show them the real life relevance, that’s when their eyes light up.*
Finding a real solution

The impact of the model
The impact of these strands on educational outcomes is clear. Attendance rose from 87% to 96% and suspensions fell 40% as young people felt more engaged. In ten years, the graduation rate has gone from 58% to 81%, with significant increases in academic subject results. Given the average difference in annual income between a high school drop-out and high school graduate, it is estimated that more than 12,200 additional students have graduated, adding more than $100m to the local economy every year.

FORD NEXT GENERATION LEARNING
The transformation that took place in Nashville was not a one off, but part of a structured programme led by Ford Next Generation Learning, who are already working with more than 40 communities across the US. Having seen the impact of this approach, the Edge Foundation invited Ford NGL to become a founding partner in Edge Future Learning, the first time that they have worked outside the US. They have supported the development of a model in the UK that builds on all of their lessons and experience from transforming American schools.

FOUNDING PARTNER PROFILE – FORD NEXT GENERATION LEARNING
Ford Next Generation Learning (Ford NGL) is an experienced and respected US-based non-profit that was created by the Ford Motor Company Fund.

They have developed a community-driven approach to educational transformation. Ford NGL advances student, community, and workforce success by using its proven blueprint to increase community engagement in schools and prepare young people for college and career.

Ford NGL maintains a collaborative network of communities to elevate the impact of this transformational education model.

You can find out more at www.fordngl.com.

There is some evidence that through the introduction of the Gatsby benchmarks and the proposed new Ofsted framework, the English system is becoming more receptive to a broader approach. The transformation in Nashville, supported by Ford NGL, provides a striking example of how the focus on transferable skills, making learning relevant and involving employers can have a dramatic impact on educational outcomes.
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4. Our principles for deeper learning

The Edge Foundation wanted to draw on the lessons from Nashville to develop a model that suited the UK context. To make that as strong as possible, it was important to draw on a wide range of examples of local and international schools, colleges and programmes that are successfully helping students to gain the skills they need (Chapter 2).

From High Tech High in San Diego to the P-TECH school in Brooklyn, School 21 in London to XP in Doncaster, the team have worked closely with a wide range of professionals to understand their approach and practice. Although many used different language, the similarities between these approaches were striking and relate closely to what has been described by the Hewlett Foundation as ‘deeper learning’.

The key elements that are common to the leading approaches have been drawn out in the first version of our principles for deeper learning. This is set out below together with short evidence summaries produced by experts at the UCL Institute of Education (IOE), the Department for Education at Oxford University and Education and Employers. These are underpinned by a more detailed literature review setting out the full evidence base, which can be found at: www.edge.co.uk/edge-future-learning/the-evidence.

Our team has examined in detail the UK and international literature from academics and practitioners. This clearly supports the effectiveness of the key ingredients within Edge Future Learning, but also provides a whole host of lessons about how those ingredients can be implemented with the greatest impact.

Dr Lynne Rogers, IOE

There are also a small number of brief examples for each principle. More detailed case studies of these models are included in recent Edge reports, including Our Plan for 14-19 Education and Towards a Twenty-First Century Education System. To find out more, there is full list of examples with links to additional information in Annex A.
Making learning relevant to real life
Breaking down subject boundaries and teaching through a real world lens.

Developing transferable skills
Equipping young people with the skills they need for further study, life and work.

Involving employers and the community
Engaging local employers and the community in developing the future plan for the school or college and in curriculum delivery.
Making learning relevant to real life

What does it mean?
Breaking down subject boundaries and teaching through a real world lens.

Why is it important?
Harnessing the power of relevance in the classroom makes learning more engaging by showing students how it relates to real life and to possible future careers.

What are the key features?
- Teachers work outside and across traditional curriculum boundaries to make learning more holistic.
- Teachers work in teams to share expertise and bring multiple viewpoints.
- High quality applied learning, often through project based or expeditionary learning, with students working on broad questions and real world issues.
- Careers guidance integrated into rather than separated from the curriculum.

What is the evidence base?
The international research literature provides positive examples of bringing learning to life at every stage of education, often encompassing cross-curricular and enquiry-based approaches such as project-based learning (PBL). For example, combining geography, mathematics and biology in secondary school fieldwork (Karvankova and Popjakova, 2018), and extensive cross-curricular work in Learning through REAL projects (Menzies et al., 2016). There are many research examples of successful PBL, provided teachers set realistic, clear goals. Significant impact is found in studies that combine a longitudinal approach with authentic real-world tasks, and in whole-school approaches. For example, Expeditionary Learning schools show the potential for educators to maintain a hands-on, authentic curriculum, even when national policy might pressure schools to do otherwise. (Stern, 2016).

Teachers need explicit training and ongoing school support to deliver these approaches, and the benefits of sharing expertise can be considerable: Feldman (2011) showed how a university collaboration gave non-science teachers the knowledge and expertise to deliver authentic, real world science projects in elementary schools. Benefits also arise from cross-curricular pedagogy in which subject teachers look for common content across different subjects then cross-reference this in lessons to provide a more holistic learning experience, with the frequent inclusion of real world examples to illustrate lesson content.

Transferring responsibility for careers guidance from external careers services to schools created a huge opportunity to link enquiry learning approaches, real-world
tasks and integrated careers education and learning. Research suggests that strong career learning environments require an integrated, whole-school approach that involves tutors, teachers and managers in delivering a careers curriculum (Hooley, Watts and Andrews, 2015) and these need to bring in expertise from employers and other stakeholders (Careers Sector Stakeholders Alliance, 2014).

Liberating teachers by crossing curriculum boundaries and linking with real world context and expertise can dramatically raise student engagement as well as attainment.\(^{19}\)

**What does it look like in practice?**
- At **XP School** in Doncaster, instead of separate subject lessons, students take part in expeditions - interdisciplinary, in-depth studies of compelling topics in groups that bring together knowledge, skills and experiences holistically across either humanities or STEAM.

- **PBLWorks’** world-leading approach to project based learning focuses on setting students a clear and stretching ‘driving question’ that requires them to investigate a cross-curricular theme, gather rich knowledge and simultaneously develop skills like problem solving and team working.

- At **Great Torrington School**, in Year 7 teachers work in trios to bring together different subject knowledge and teaching techniques, creating projects that cut across diverse curriculum areas to integrate creativity into the classroom.
Developing transferable skills

What does it mean?
Equipping young people with the skills they need for further study, life and work (Chapter 2).

Why is it important?
As they enter a rapidly changing labour market, to give them the best chance of success, students need to have developed the key skills that employers are looking for, like team working, problem solving and communication.

What are the key features?
Students and staff have strong relationships, which can be supported by small learning communities or close tutor groups and help to build transferable skills.

- The school or college is focused on giving students the real skills needed for further study, life, work and employability such as creativity and problem solving.
- Teaching is knowledge-engaged, with knowledge and skills taught hand in hand and clearly signposted.
- Within English and maths, there is a focus on real life functionality, including through oracy and numeracy.

What is the evidence base?
Student-centred learning environments that support autonomous enquiry-based learning in an authentic context have been found to develop transferable skills. They foster self-regulated learning, are linked with students reporting more pleasure and effort, and have been shown to develop stronger relationships with teachers. Replacing traditional delivery methods with student-centred learning approaches can produce a dramatic change in classroom relationships. Doppelt (2003) removed lower-achieving students from a ‘low learning track’ to follow an electronics-based curriculum that included theoretical and practical learning, skills development, and had a knowledge-engaged, vocational focus; the intervention produced significant, positive improvements in matriculation results.

A knowledge-engaged curriculum that matches and synchronises knowledge and skills development produces high-level, transferable real life skills. Horn and Veermans (2019) explicitly facilitated critical thinking as a separate course whilst also embedding critical thinking skills into subject coursework - assessment using a measure of digital literacy found a significant impact on the ability to detect fake news, a valuable 21st century skill. Knowledge-engaged learning can apply to any subject and extend into extra-curricular activities, from a multicultural cooking club that developed citizenship skills to a book club that liberated students from a school curriculum where texts were imposed.
The importance of **numeracy** is internationally recognised; the innumerate are excluded from many aspects of modern life (Craig, 2018). **Oracy** is equally important - students’ ability to participate in the education process is influenced by their oracy skills (Mercer, Warwick and Ahmed, 2017). A curriculum that goes beyond ‘speaking’ and ‘listening’, incorporating reasoned debate and public audiences, can develop oracy skills that underpin cognitive development. This impacts on every subject, improves academic attainment, influences out-of-school activities, and enhances employability.

**Placing students at the heart of the curriculum and helping them to develop transferable skills can prepare young people for life and work. It also makes them engaged, motivated and keen to learn, all of which underpin life-long learning.**

**What does it look like in practice?**

- In **Ford Next Generation Learning** communities, schools are divided into smaller learning communities or ‘schools within schools’, helping students to form close relationships with a smaller group of students and teachers and support them to develop transferable skills and career preparation.

- At **High Tech High**, vertical tutor groups, known as advisories, bring together students from across all four years. They meet for approximately two hours a week helping to form close bonds and provide support and insight across years – for instance, older students present back to their advisory about their workplace experiences.

- At **School 21**, from the start of primary school, teachers use a range of tools and techniques to support students with developing and improving their oracy skills, creating dialogic cultures in their classrooms, and integrating speaking and listening into all lessons and projects.
Involving employers and the community

What does it mean?
Engaging local employers and the community in developing the future plan for the school or college and in curriculum delivery.

Why is it important?
A consensus amongst leaders, staff, pupils, parents, businesses and community organisations provides the strongest possible foundations for transformation. Rich employer and community engagement in the school or college supports both of the other key ingredients by bringing the curriculum to life and building real world skills.

What are the key features?
- Staff, leaders, pupils, parents, governors, employers and community organisations work together to develop a strategic plan for the school or college.
- Employer and community partners directly support delivery of learning, bringing the curriculum to life.
- Every student experiences a meaningful programme of employer and community experiences that are scaffolded and enable progression to build across their education journey.

What is the evidence base?
In recent years, educational scholars, as well as government guidelines, have advocated a closer connection between schools and the wider community to provide students with a greater opportunity to understand the current labour market and the world of work. Much of the literature in this sphere focusses on employer-led community connected learning. Involving local employers, a key pillar of the wider community, as part of these programmes and experiences has become a commonplace aspect of schooling in Britain (Stanley et al., 2014). Depending on the school or college, this can take place through participation in a meaningful programme of employer experiences such as short periods of work experience, career talks, mock interviews, CV workshops and workplace visits.

To effectively transform the way that schools prepare young people for life and work in the twenty-first century, the literature suggests that learning institutions should strive to engage and facilitate dialogue between school staff, leaders, pupils and parents, governors, employers and community organisations. These community stakeholders and partners are vital in designing, and directly supporting, a truly modern curriculum.

There are a number of robust studies that provide evidence of improved employment outcomes where learning involves employers and the community, both in terms of wage premiums and reduced incidence of NEET (Not
in Education Employment or Training) (Mann et al., 2017). Research suggests that participation in such community-led activities can bring the curriculum to life by enhancing understanding of jobs and careers, providing the skills and knowledge demanded by the contemporary labour market, enriching education and underpinning student attainment (Mann et al., 2018). Moreover, the literature confirms that encounters with new people can lead a young person to change an important element of their own thinking about themselves and their own sense of agency (Stanley and Mann, 2014).

The existing literature offers a number of recommendations in optimising the impact of community connected learning. To be most effective this provision must be recurrent, authentic, contextualised, started at an early age, and, importantly, must have students at the heart of such activities.  

What does it look like in practice?

- In Ford Next Generation Learning communities, schools and colleges are supported to bring together leaders, staff, parents, pupils, employers and community organisations to develop a shared vision and a ‘leaver profile’ setting out the skills, competencies and behaviours that they are aiming to develop.

- At UTC Reading, staff work closely with a range of local businesses and the local university to collaboratively develop and deliver projects. Employers work alongside teachers to set the context or challenge, provide external input and offer feedback and evaluation.

- At the P-TECH School in Brooklyn, staff work closely with lead sponsor IBM to provide students with a wide range of employer experiences from job shadowing to work experience, mock interviews and internships.
Supporting factor

Training staff

What does it mean?
Giving leaders, teachers and staff access to high quality and regular development opportunities.

Why is it important?
In order to have the confidence to do something different, leaders and staff need space, support and training so that they have access to the best approaches to adapt and use. To enable high quality real world learning, teachers need dedicated time to work together in teams to collaborate and prepare.

What are the key features?
- Leaders and staff are given access to high quality continuous professional development that builds clearly step by step.
- Teachers are given time to plan in cross-curricular teams to support the delivery of real world learning.
- Teachers have the opportunity to connect with local employers and community organisations, including through externships.
- A skilled non-teaching member of staff leads on employer engagement to foster and strengthen relationships.

What is the evidence base?
High quality staff training or continuing professional development (CPD) is recognised as a key factor in the development of good teachers and therefore in the improvement of pupil learning. Teacher CPD can include any teacher learning activity, from attending a one-day workshop to participating in a weekly study group to undertaking a degree course at a university (Caena, 2011). But not all CPD programmes are supported by evidence for improving teaching and learning. High quality, effective CPD includes the following components:

- A focus on key subject and pedagogical knowledge;
- Use of active learning formats and strategies;
- Coherence with the education system and the individual teacher’s needs;
- Sufficient time allotted;
- Collaboration of colleagues from the same school or department.

Additionally, high quality CPD reflects an underpinning assumption that teachers are competent professionals whose learning should be activated rather than delivered (De Monte, 2013).
Several countries with high educational achievement have already put these core principles of effective CPD into action (see Darling-Hammond, 2017).

For example, in Japan, Singapore, and Hong Kong, teachers are given non-contact time for collaborative learning sessions, such as “lesson study” where the group plans, observes, and refines a lesson together. In Shanghai, China, teachers receive mentoring throughout their careers – even when they move into senior roles. Both New Zealand and British Columbia, Canada have had success with collaborative, inquiry-based teacher learning programmes that address a wide range of topics, from raising reading achievement to promoting healthy lifestyle choices.

There is no particular “silver bullet” CPD programme that is always more effective than others. But through an examination of successful programmes’ common features and international examples it is possible to promote meaningful, effective teacher and pupil learning.\

What does it look like in practice?

At XP School, instead of the usual five days of CPD, staff are given fifteen days a year for development and planning. This provides them with the time and space they need to develop high quality expeditions and link these directly back to the curriculum.

In The Academies of Nashville teachers have the opportunity to take part in externships, spending up to five days working with an employer or community organisation and then using that experience to develop rich and relevant curriculum materials to bring back to their classroom.

At School 21, rather than all students doing nine or ten GCSEs, curriculum time and resources are used to hire a team of professionals that build relationships with a whole range of organisations, and to run a real world learning programme. Every student in Year 10, 12 and a selection of year 13s spend half a day each week working with a real employer, solving a problem for them.
Measuring progress

What does it mean?
Measuring student progress in the skills and behaviours that underpin deeper learning, not just in exam results.

Why is it important?
The education system tends to focus on what is measured, so it is important that we move away from looking purely at exam results and instead measure progress in the skills and attributes we want to develop, such as problem solving, teamwork and communication.

What are the key features?
- Schools and colleges rigorously measure students’ progress in the employability and life skills that they are developing.
- Students work towards showcases and reflective presentations showing how they have developed their skills.
- Schools and colleges track and pay attention to the destinations of their former pupils as a measure of their success.

What is the evidence base?
Assessment influences what is learned and how students learn. High-stakes end of course examinations drive the curriculum with unintended consequences on students’ learning (Stobart, 2008). This can result in a narrow curriculum determined by students’ assessment demands since students concentrate only on those areas of the curriculum that they think will appear in the exam. This backwash effect of assessment also impacts on teacher behaviour, encouraging them to focus lessons on exam content and strategies with an increase in school assessments, a narrowing of the curriculum and a greater emphasis on revision and exam skills (e.g. Baird et al., 2013).

Conventional assessment methods, such as exams, seem to encourage students to adopt a surface approach with reliance on rote-learning and memorisation rather than promote conceptual learning or the practical application of factual learning, a deep approach. In parallel, opportunities for formative feedback and peer assessment, so important in developing self-regulated learning and collaborative learning skills, are lessened in importance.

Given the demands of the 21st century, in relation to the complex economic, environmental and social challenges that we face, internationally there are calls for different approaches to assessment and evaluation that enable young people
to develop a wider range of skills and attributes than previous generations (e.g. Hipkins and Cameron, 2018; OECD, 2018). More varied forms of assessment are needed that focus on rich tasks that promote a deep approach to learning whereby assessment encourages critical thinking, reflection and creativity. This could be through problem-solving activities with learning applied to new situations, through portfolio assessment or performance-based assessment, for example. Important too, is designing authentic evaluations that evidence the development of non-traditional outcomes such as employability, life skills, team working and communication.

There is much to be done so that assessment is a transformative tool for supporting learning in its widest sense and enables young people to flourish in their transition to the world of work and take an active place in society.23

What does it look like in practice?

- At Excelsior Academy, staff have developed an internal assessment tool to regularly measure their students’ development in areas like problem solving and team working as they progress through projects. This helps them to see how they are building these crucial employability skills.

- At High Tech High, the schools are filled with public exhibition spaces where the work created by students is displayed so that it can be viewed by pupils, staff, parents and members of the community.

- At the Envision Schools, students work towards a Defence Portfolio, a presentation in front of peers, staff and pupils showcasing three key pieces of work and reflecting on the skills they have developed, how they have applied them and their plans for the future.
Visionary leadership

What does it mean?
Setting a clear and collaborative vision that focuses on deeper learning and underpins all of the work of the school or college.

Why is it important?
It takes time and courage for schools and colleges to transform their practice along the lines set out in the key ingredients. It is essential that leaders with vision and drive are given the support and space they need to develop the culture of the institution and then take a visible lead on embedding this in every aspect of their work.

What are the key features?
- There is a clear vision for the school or college set out in a ‘leaver profile’ developed with the community.
- Everyone from senior managers to pupils articulate, live and defend the culture that supports that vision.
- The institution sees itself as part of a shared community of schools and colleges.

What is the evidence base?
Visionary leadership is a type of transformational leadership – leadership that works by motivating and collaborating with an organisation’s members rather than through more top-down methods. Researchers have found that having a clear vision is an integral component of effective school leadership and that school leadership has both direct and indirect positive effects on pupil learning (Bush and Glover, 2014). These effects are larger at schools in more challenging, socio-economically deprived contexts.

Visionary leadership must incorporate several key features to be most impactful (Robinson et al., 2008). Effective visionary leaders have a clear plan for action and enact the school vision through a range of activities such as developing teacher skillsets and creating a positive school culture. They distribute responsibility across the organisation, collaborating with team members both in order to create a feasible vision and to promote member buy-in of that vision.

Effective school leaders tend to use a similar set of practices, but they also adapt their vision and actions to their particular context – including the school, community, and national cultures. Visionary school leaders have a moral foundation to their practice, considering the most up-to-date information and the well-being of all organisation members when making decisions. Finally, visionary leaders give an appropriate timescale for change to take place, allowing teachers time to “own” the vision and related reforms.

In summary, vision is necessary but not sufficient for effective school leadership (Marzano et al., 2005).
Highly impactful visionary leadership incorporates the key supportive features, above, and improves education outcomes through motivating, inspiring, and collaborating with teachers, parents, and pupils.\(^{24}\)

What does it look like in practice?
- Churchill Community College worked with more than 40 stakeholders, including staff, parents, pupils, employers and community organisations to develop its ‘leaver profile’ which underpins the vision for the school.

- At South East Regional College in Northern Ireland, senior leaders led the implementation of an innovative model of project based learning. They set a clear vision, established and communicated the evidence base and then invested in staff CPD to ensure that everyone felt comfortable with the new way of working.

- In the US alone there are more than 2,800 schools in 261 districts in the deeper learning network coordinated by the Hewlett Foundation. These kinds of network allow schools to share effective practice, save time by building on each others’ work and find a greater collective voice.
5. Putting the principles into practice – The North East Hub

The Edge Foundation started by developing and piloting specific elements of what had been seen in the different models to begin to learn lessons and establish them in the UK context. The Give Yourself the Edge (GYTE) pilot, for instance, began to adapt the teacher externships from Nashville and delivered positive results – 80% of teachers surveyed agreed or strongly agreed that participating in GYTE gave them an insight into the world of work.25

The next step was to find a community that had the capacity and enthusiasm to try a new educational approach. The North East Local Enterprise Partnership (North East LEP) had recently led the successful piloting of the Gatsby benchmarks of good careers guidance and were keen to go further.

Edge worked with the North East LEP to bring on board a diverse group of schools for the first pilot phase – Excelsior Academy in central Newcastle and Churchill Community College and Norham High School in North Tyneside. In September 2017, Edge organised an opportunity for representatives

FOUNDING PARTNER PROFILE

North East Local Enterprise Partnership

The North East LEP is a private, public and education sector partnership, supported by a small executive team that provides strong, collaborative leadership to support the growth and development of the North East economy. The North East LEP developed and implemented a pilot into testing the Gatsby Benchmarks for Good Careers Guidance based upon international research.

The North East LEP now actively support the majority of secondary schools and all colleges and provides a regional network of support through a wide range of organisations and institutions including the Enterprise Advisor network.

The North East LEP are also the Cornerstone Career Hub for England helping to support the implementation of the careers strategy across the country.

You can find out more at www.nelep.co.uk.
from the LEP, the CBI and the schools to visit Nashville so that they could experience and be inspired first hand by the work of the Academies of Nashville and of Ford NGL (Chapter 3).

The schools worked with experienced coaches from Ford NGL to run a series of workshops bringing together leaders, staff, parents, governors, pupils, businesses and community organisations for the first time. Working together, this group developed a ‘leaver profile’ for their school, articulating a shared vision for the skills, attributes and behaviours they wanted to see in that school’s graduates (Establishing Culture).
Putting the principles into practice

With the support of the North East Collaborative Outreach Partnership, a team of Industry Alignment Support Officers (IASOs), modelled on the Academy Coach role in Nashville, were put in place to focus on the establishment of high quality links between the schools and local employers. Meanwhile, trailblazer teachers were chosen in each pilot school and provided with a rich series of learning visits and CPD sessions to introduce them to many of the examples in Chapter 3 (Training Teachers).

Building on what they learned, teachers in the three schools began to test out ways to deliver deeper learning, using real life projects and examples as the context for the curriculum (Making Learning Relevant to Real Life). To enrich this even further, they made use of the strong employer links developed by the IASOs to take students out to work with real businesses and community organisations (Involving Employers and the Community).

Projects in Action

- At Churchill Community College, pupils worked with students from nearby Newcastle University to bring computer science alive using Micro:bit devices to solve real problems they identified around their school. They worked in teams to design gadgets and programme their devices to address these issues. Examples included a device to remind pupils to wash their hands when they leave the bathroom and a device to monitor lunch...
queues and feedback the information in real time to classrooms. The partnership gave pupils the opportunity to interact with PhD students, access university equipment and showcase their work to teachers, university students, lecturers and their parents in the School for Computing at the University.

- Norham High School has developed close partnerships with AgeUK and local travel company Go North East. Their ‘Journey Through Tyne’ project saw pupils partnering older residents to share their memories and personal experiences whilst travelling through Newcastle and recording their oral history using an app designed by a PhD student at the local University.[ii] Go North East encouraged pupils to share their views on the barriers within the local transport infrastructure and provision. The journey concluded in a tour of the Go North East depot to discover the range of career opportunities within the company.

- At Excelsior Academy, pupils embarked on a renewable energy themed project aligned to one of the main economic growth sectors in the North East. Pupils found out about Northern Powergrid and their future plans to adapt to challenges in connection with climate change. The pupils visited Port of Blyth to learn more about hydroelectricity and wind power. These experiences provided cross-curricular learning supported by STEM experts from the businesses and from the Tomorrow’s Engineers programme.
Putting the principles into practice

As part of these projects, students in the schools worked in teams to solve real problems, helping them to develop transferable skills like team working and problem solving. The teachers developed tools to measure their progress in these areas as they worked towards exhibitions and showcases of the products they had developed. Those staff who were not directly involved spoke about the change in pupils’ attitude and approach in their lessons.

These reflections on the first phase of the pilot can be seen in the two films opposite and we have commissioned an independent evaluation of the work by Derby University’s International Centre for Guidance Studies so that we can continue to build on and improve the model.

The early results from this work are encouraging. The schools report that behaviour incidents and attendance improved on the days when projects were taught. The staff involved talked about how much they had enjoyed the opportunity to work with employers and community organisations.

As a result of the hard work of the schools and partners, in June 2019 the North East was designated as the first Ford NGL community outside of the US.

Putting the principles into practice

CHERYL CARRIER Chief Executive, Ford Next Generation Learning

We know that by engaging students in authentic learning experiences, they begin to internalise the importance of being lifelong learners and understand how their curiosity will support them in college, career and life.

As an organisation, Ford NGL seeks to model a lifelong approach to learning by adapting our model to engage communities of all sizes and complexities. Our work has taken place primarily in the United States. However, in the last couple of years, we ventured outside the US to collaborate with The Edge Foundation to develop and pilot a Ford NGL approach that could be scaled in the UK to provide students with the very opportunities that inspire students to be curious, lifelong learners who are prepared for their future.

We are proud to be working with the innovative Edge Foundation, North East LEP, Excelsior Academy, Churchill Community College, and Norham High School, who were keen to pilot this approach in the UK. Their bold leadership has paved the way for others to become part of a network of schools who are transforming the way teachers teach and students prepare for their future. We look forward to our continued partnership and growth.
Implementation in Action

The Edge Foundation are making a series of short films to share the work taking place in the North East and in some of the other partner projects set out in this report.

The first film explores the early impact of the changes taking place after just a few months of delivery.

The second film shares highlights from our first showcase visit to the North East for schools and education leaders from around England.

We will continue to make and share further films over the coming years as our work progresses.
6. Getting involved

Heads, principals, teachers, tutors, parents, pupils, businesses and community organisations around the country are clear that **there is a building momentum for change in the education system.** They recognise the need for schools and colleges to have the freedom to prepare young people with the skills they need for the future rather than rote learning facts and figures (Chapter 1 and 2).

The Edge Foundation will continue to campaign for policy change – for fairer funding for schools and colleges; for changes to accountability to focus on improvement rather than inspection and destinations rather than exam certificates; for more autonomy; for a truly broad and balanced curriculum; for rigorous and widely available CPD and for the support and encouragement needed to build partnerships between schools, colleges, employers and community organisations.

But as the examples set out in Chapter 3 and 4 show, there is much that we can already achieve even within the current education policy framework. That is why through **Edge Future Learning,** Edge wants to provide as much support and encouragement as possible for schools and colleges to learn from each other and embed the principles of deeper learning.

Building on the early success of the North East Hub (Chapter 5), 2019 has already brought three positive steps forward:

* In partnership with the North East LEP, Edge has secured funding from the European Social Fund to offer **teacher externships** in schools across the North East, giving their staff the opportunity to connect with local businesses and build relevant curriculum projects based on that experience.

* With the support of the Four Acre Trust, Edge has been able to **expand the work of the North East Hub** to cover three new schools and colleges. Castle View Enterprise Academy, James Calvert Spence College and Education Partnership North East will be joining the second phase of this work in the North East from September 2019.

The Edge Foundation wants to go even further to help more schools, colleges, localities, partners and Multi Academy Trusts to consider how they can build the lessons of Edge Future Learning into their work. You can get in touch at **FutureLearning@edge.co.uk** to share what you are already doing, find out more, stay up to date and get involved.
**MEET THE TEAM**

**Olly Newton, Director of Policy and Research**
Olly leads the development of the Edge Future Learning model and the research that sits behind it. He is passionate about connecting research, policy and practice to try to drive the best outcomes for schools and colleges. Olly uses the knowledge and understanding from his previous career at the Department for Education to try to drive policy change.

**Pete McCabe, Head of Edge Future Learning**
Pete leads the delivery of the Edge Future Learning model, working in collaboration with our fantastic UK and international partners. In addition, Pete oversees our strategic growth into new schools and colleges across the UK. His background in youth participation, most recently as a senior leader at the Prince’s Trust, ensures our work is scalable and sustainable whilst still focusing on the needs of every child.

**Helen Beardmore, Education Delivery Manager**
Helen leads the development of the education and curriculum content for Edge Future Learning. Helen has undertaken training at High Tech High and with PBLWorks. This builds on her own experience in schools as head of department for geography and business studies. Whilst teaching she was a Lead Practitioner and moved on to become SSAT’s National Specialism Coordinator for Business and Enterprise Colleges.

**Karen Burgess, Employer and Education Engagement Coordinator**
Karen leads the delivery of our programme of teacher externships in the North East, working with schools and employers, particularly SMEs, to make links and then support teachers to explore the business and develop curriculum projects. Karen’s professional background spans work in the pharmaceutical industry in the North East and in the classroom as a chemistry teacher, helping her to see this from both sides.
## Annex

### Annex A – Schools, Colleges and Models that Inspired Edge Future Learning

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<tr>
<th>School / College / Model</th>
<th>Find out more at…</th>
<th>Read our Edge Case Study in</th>
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<td><em>Towards a Twenty First Century Education System</em>[^21^] p. 21</td>
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<td>The Academy Grimsby (TAG)</td>
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<td><em>Towards a Twenty First Century Education System</em>[^24^] p. 24</td>
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<td>University Technical Colleges</td>
<td><a href="https://www.utcolleges.org/about/">https://www.utcolleges.org/about/</a></td>
<td><em>Towards a Twenty First Century Education System</em>[^27^] p. 27</td>
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[^26^]: 26th page of *Towards a Twenty First Century Education System*
[^21^]: 21st page of *Towards a Twenty First Century Education System*
[^27^]: 27th page of *Our Plan for 14-19 Education*
[^24^]: 24th page of *Towards a Twenty First Century Education System*
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Endnotes

2. Ibid.
19. Key references for this evidence summary:


20. Key references for this evidence summary:


21. Key references for this evidence summary:


22. Key references for this evidence summary:

- DeMonte, J. (2013) High-Quality Professional Development for Teachers: Supporting Teacher Training to Improve Student Learning (Washington DC, Center for American Progress)
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23. **Key references:**

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