

Centre of Excellence Supplement

Summer 2024

A supplement exploring how industry and education are collaborating to create a highly-skilled, adaptable, agile workforce employing WorldSkills UK ingredients for success.



worldskillsuk
excellence at work

Championing Future Skills

In this edition:

WorldSkills Lyon 2024: Building the pathway to excellence

Championing future skills:
Introducing our Centre of
Excellence supplement

Competition-based learning:
Achieving personal best

Mainstreaming international
best practice: Developing skills
excellence

A new era of science and
technology: What it means for
future skills development

WorldSkills Lyon 2024: Building
the pathway to excellence

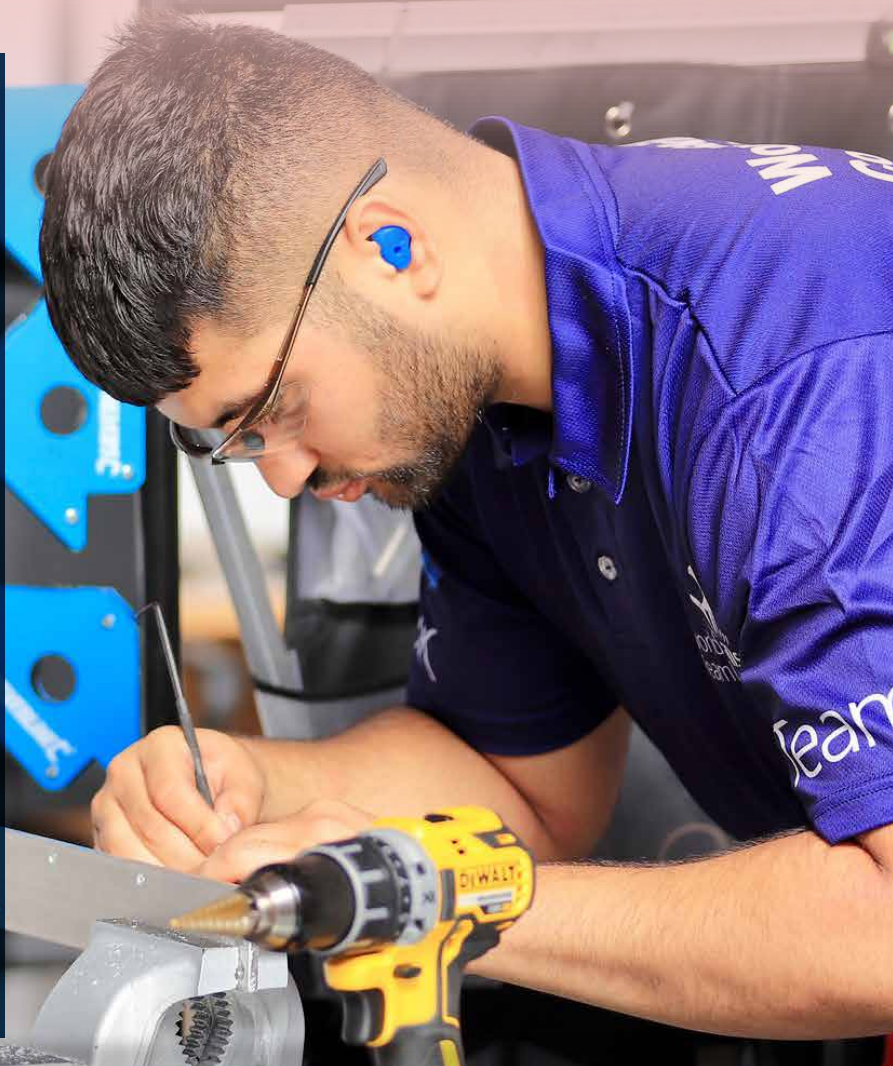




Table of Contents

4 Championing future skills: Introducing our WorldSkills UK Centre of Excellence supplement

A foreword from Parisa Shirazi, Director of Standards, WorldSkills UK.

6 Competition-based learning: Achieving personal best

We explore the development and implementation of Competition Based Learning and how techniques from elite sport can raise standards and help learners to achieve their personal best. We consider case studies from Oldham College, and interview Michael McGuire, Digital Construction lecturer at Glasgow Caledonian University and WorldSkills UK Training Manager for Digital Construction.

[Watch our full interview](#) with Michael McGuire.



10 Mainstreaming international best practice: Developing skills excellence

This article considers the importance of international benchmarking resources on the 'Learning Lab' that can support skills excellence and the design and delivery of a curriculum with intent.

14 A new era of science and technology: What it means for future skills development

Thanks to global leaders such as the Wellcome Sanger Institute, the UK is at the forefront of skills development across genomics, bioinformatics and biotechnology, and health and life sciences. In this article we explore the implications for educators, and talk to Chris Harrison from Create Education – a WorldSkills UK Centre of Excellence partner – about technologies and teaching approaches to drive skills improvement in Additive Manufacturing.

[Watch our full interview](#) with Chris Harrison.



17 WorldSkills Lyon 2024: Building the pathway to excellence

Adam Kirkpatrick represented Team UK in the Industrial Robotics competition at the WorldSkills Special Edition 2022 in Luxembourg. In this article, he shares the benefits that the competition has brought to him personally and professionally, and we consider social mobility through skills excellence.

[Watch our full interview](#) with Adam Kirkpatrick.



20 Learning Lab resources

The WorldSkills UK Learning Lab is powered by international best practice. This virtual learning centre provides on-demand teaching and assessment resources, and teacher training tools to embed world-class skills in technical education and apprenticeships.

Access the WorldSkills UK [Learning Lab](#).



Championing Future Skills

Parisa Shirazi, Director of Standards, WorldSkills UK

Drawing on international best practice, underpinned by groundbreaking research into UK and international TVET systems, the WorldSkills UK Centre of Excellence, has supported over 10,000 educators to embed world-class techniques into their practice, reaching almost 200,000 learners since 2020.

With a confident focus on excellence for all, the WorldSkills UK Centre of Excellence is rapidly gaining recognition as a hub for innovation, that is codifying the art and science of exceptional teaching, learning and assessment across further and higher technical education.

Together with NCFE, Department for Education and supported by Autodesk, and the Skills and Education Group, we are committed to a systems shift that helps shape a better future, by supporting a growing network of over 130 institutions who are committed to excellence for all. By harnessing the expertise of our industry and international partners, we embed national and international best practices, insights, and techniques that raise the quality of teaching and assessment.

The result is to help better serve students, apprentices and employers who are demanding the development of higher-quality skills in key growth sectors. By embedding world class training standards across the UK, we can help drive investment, jobs and economic growth, and that is why we are launching our supplement.

In this first edition, we focus on Championing Future Skills. We'll explore competition-based learning, achieving personal bests in skills education, and how this is being brought to life at Oldham College. We'll also examine how organisations across the UK are adopting international best practices to raise standards and discuss the new era of biotechnology. Specifically, we'll look at how additive manufacturing is transforming healthcare and how we can stay updated on critical technologies to keep the UK workforce competitive.

The WorldSkills UK supplement highlights the innovative collaboration between education and industry to create an adaptable and agile workforce, leveraging international best practices to unlock the potential for a world-class skills system. The supplement is our platform to shine a spotlight on innovation, practice and thought leadership to:

Provoke thought and provide inspiration across WorldSkills UK's growing network.

Give voice to the people and organisations involved in driving up standards in skills and excellence in teaching, learning and assessment.

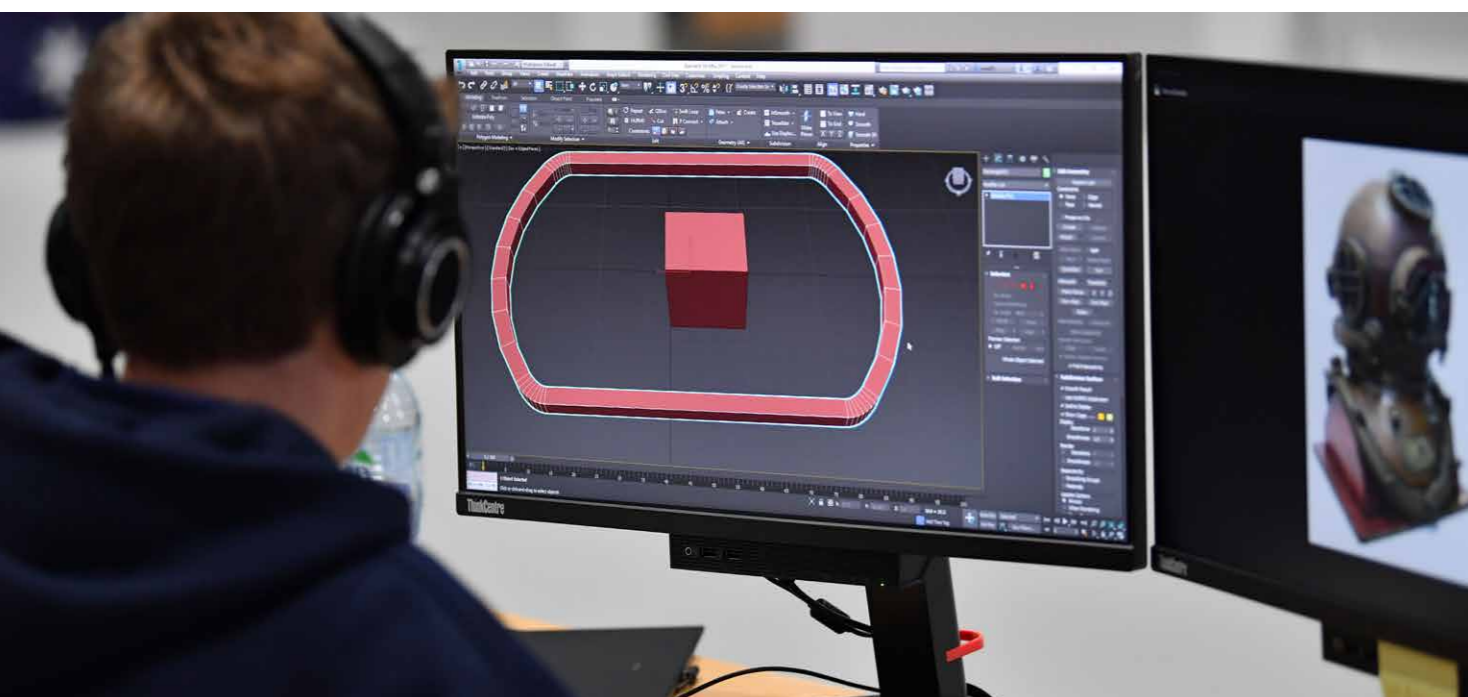
Celebrate impact by showcasing the excellent work that is undertaken, daily, as WorldSkills UK works closely with further and higher technical education providers, industry and four nation governments.

Add value for the WorldSkills UK network and readers by sharing best practice, inspiring innovation and promoting inclusion.

We hope this edition provides you with valuable ideas and inspiration that you can apply to your approach and practice, or further investigate through the WorldSkills UK Centre of Excellence.

Together, we can continue to drive excellence and make a lasting difference in the lives of learners across the country.

If you want to get in touch with us and hear more, please contact centreofexcellence@worldskillsuk.org



Competition-based learning: Achieving personal best

WorldSkills UK is an advocate for competition-based learning (CBL) as a means to drive skills development in individuals. It's an evidence-based approach that has had demonstrable success in driving standards and promoting excellence in teaching, learning and assessment. In this article we'll explore CBL and how techniques borrowed from elite sport can be applied to education settings.

It started with a Freddo

Michael McGuire is a lecturer in Digital Construction at Glasgow Caledonian University, a WorldSkills UK training manager and coach and has been developing a CBL approach in his subject specialist area for over a decade. For him, it started with a Freddo – a popular caramel chocolate bar – that a former colleague would offer as a performance incentive for students in her class as a reward for the first to finish a task, or for the highest performer. That small incentive drove an element of friendly competition across the classroom, and a reason to engage with the task and the learning:

“What I've done is develop that. I've looked at varying incentive levels: a chocolate bar will hold someone's attention for a class, but not for a week. What we find with increasing the incentive levels – to include, say, a backpack full of Autodesk merchandise – is that they'll put in more time practicing. But it's actually gone beyond the incentives now: the students are in it for a sense of 'mastery' – they really want to get really good at using the software and the skills.”

For Michael, the incentive that the competitive edge provides works best in combination with other pedagogical and andragogical approaches. In his former role at New College Lanarkshire, Michael led the development of

a suite of learning resources – hosted by the College's Learning Management System (LMS) – that allowed learners to pursue self-directed learning, to receive immediate feedback on their work, and to understand their performance in the context of their peers. The LMS uses a 'gamification' approach that allows immediate feedback:

“If you've done it correctly and you get to move on to the next section, you've been given a pat on the back. If it's wrong, let's identify what's wrong really quickly and feedback on exactly where it's wrong.”

Michael's approach combines core learning and teaching methodologies – such as feedback and formative assessment – with incentivisation and blended learning approaches that drive students to achieve their personal best.

Oldham College and the ingredients for success

Oldham College are a pioneer in CBL and in the approach recommended in our [Ingredients for success report](#), which emphasises the importance of a whole organisational approach to embedding excellence. Joanne Manship is Head of Faculty Digital and Creative at Oldham College, and a WorldSkills UK champion. Jo shared learning from the College during an international exchange visit to the Netherlands in March 2024, which brought together WorldSkills partners for knowledge-sharing.

Subsequently Oldham College have shared how they have effectively embedded WorldSkills UK approaches and practices across their organisation at a WorldSkills UK Technical Leadership Learning Visit, which they hosted in June 2024.

“Just returned from an inspiring learning visit at Oldham College. The visit provided excellent insight into how the College integrates competition into their curriculum. Incorporating WorldSkills philosophies through CPD and comprehensive staff and student inductions ensures that everyone is aligned with core values and practices promoted by WorldSkills UK. Thanks for giving me a much-needed boost near the end of the academic year. I am eager to plan how we can improve our CPD and embed competition throughout the curriculum!”

An attendee at WorldSkills UK's Technical Leadership Learning Visit, hosted by Oldham College in June 2024

Jo explained how central skills competitions are in the College culture: Oldham has a 'no opt out' approach to participation for learners and apprentices, and all teaching teams now include staff that are 'WorldSkills UK Educators' – Oldham has an 85-strong team – who have been taught how to:

- build learners' confidence and resilience to cope under pressure
- take ownership in building skills
- advance positive attitudes and behaviours and help develop transferable skills
- develop excellence in all technical skills.

The College skills competitions are a way to 'supercharge' quality and – by borrowing 'competition mindset' techniques from the world of competitive sport – of building resilience and confidence in both students and staff. Those techniques can be explored through the WorldSkills UK's Mindset Masterclasses (accessed through the [Learning Lab](#)) and cover ten characteristics to develop excellence:

- commitment
- focus and distraction control
- realistic performance evaluation
- role clarity
- self-regulation
- planning and self-organisation
- goal setting and self-reward
- quality practice
- effective and controllable imagery
- seeking and using social support.

These transferable techniques are valuable to all learners, but perhaps especially to learners facing persistent barriers to learning for whom a goal-oriented approach and the imagery skills to see themselves in a position from which they may feel excluded, and the ability to seek social support are critical.



WorldSkills UK's Technical Leadership Learning Visit, Oldham College, June 2024

Raising aspirations amongst under-represented groups of learners is integral to the values of Oldham College, which takes a pro-active approach to achieving inclusion in its skills competitions by ensuring that registration for competitions isn't biased, and actively monitoring registrations. Internal marketing materials emphasise the development of life and 'mindset' skills, and the expert tuition and coaching that the college provides. Equity, diversity, and inclusion are further enabled by financial and additional learning support for those who require it. In addition to its work with WorldSkills UK, Oldham College is one of the Education & Training Foundation's [Centres of Excellence for SEND](#). It regularly sends learners, including those with special educational needs and disabilities, to national finals, and the skills and performance mindset cascades across the culture of teaching, learning and assessment across the college.

Michael McGuire stresses that these teaching and learning techniques should be sensitive to individuals' circumstances, to ensure that learning remains inclusive: he advocates keeping it fun and informal. In response to concerns that the element of competition might be unhealthy in classrooms, Michael reassures that:

"We tend to find that it makes the students more collaborative. I've yet to see any student that doesn't go out of their way to help friends, or others that they've never met before. It definitely becomes much more like a collaborative training and assessment process, but the ultimate driver is that little competitive element."

The benefits of that kind of incentivisation are well recognised. For example, in England, Ofsted's Education Inspection Framework advocates for the benefits of skills competitions within its criteria for achievement of 'outstanding' status¹: "There are many examples of commitment beyond the basics, for example high participation in skills competitions or social action projects."



1. [Further education and skills inspection handbook - GOV.UK \(www.gov.uk\)](https://www.gov.uk)



From competence to excellence

The assessment of skills is fundamental to individual success and to raising standards from competence to excellence. Our Ingredients for success research highlights the importance of benchmarking against international standards, and our skills partner – NCFE – produced a report in September 2023, [Transforming Skills: a call to action](#) that considers both the necessity of skills assessment and the need for reform.

In addition to asserting that "If you want it, you have to measure it", the report explores existing assessment models and ongoing reliance on exams that test knowledge rather than technical excellence. Learners with additional needs can be prejudiced against by this approach, and employers lack confidence in it:

"The assessment system dominates what is taught and how it is taught. Systems tend to only value what is assessed. Young people leave education with little more than a series of numbers and letters reflecting only one aspect of their achievements. Crucially, exam results provide future employers with no real information on the competencies they seek, including in vital areas like creative thinking, collaboration, and communication."²

Transforming Skills recommends rethinking assessment by broadening the approaches that we use with learners, and undertaking frequent, formative assessment:

"If a range of different forms of formative assessment run through a course, learners can be challenged in a variety of ways. If these inform a broad learner profile, this can help to build a more informed picture of how they learn...On an individual level, this would help to support learners – particularly those with specific learning needs."

2. [Transforming-skills-september-2023.pdf \(ncfe.org.uk\)](https://www.ncfe.org.uk)

Their recommendations would support the 'performance mindset' described above: frequent formative assessment enables realistic performance evaluation, self-regulation, goal setting and self-reward.

Embedding skills competitions across our further and higher technical provider curricula is an effective way to achieve this. This was evident from the international exchange visit that Jo Manship and others had to the Netherlands in March. Long-established WorldSkills competitions have helped to showcase technical and vocational education and training in that country, and enviably high participation levels are achieved because of the value that education providers, employers, and society more widely place in them.

The UK has work to do to keep up with our European partners in their approach to technical education and skills. WorldSkills UK – as a world-class skills network – can provide the support to act as a catalyst for raising standards, championing future skills and empowering young people from all backgrounds. In the next article, we'll explore how the UK can mainstream international best practice, by working closely with employers and international partners, members of the global WorldSkills network.

[Watch our full interview](#) with Michael McGuire and look out for upcoming [Technical Leadership Learning Visits and Professional Exchanges](#).



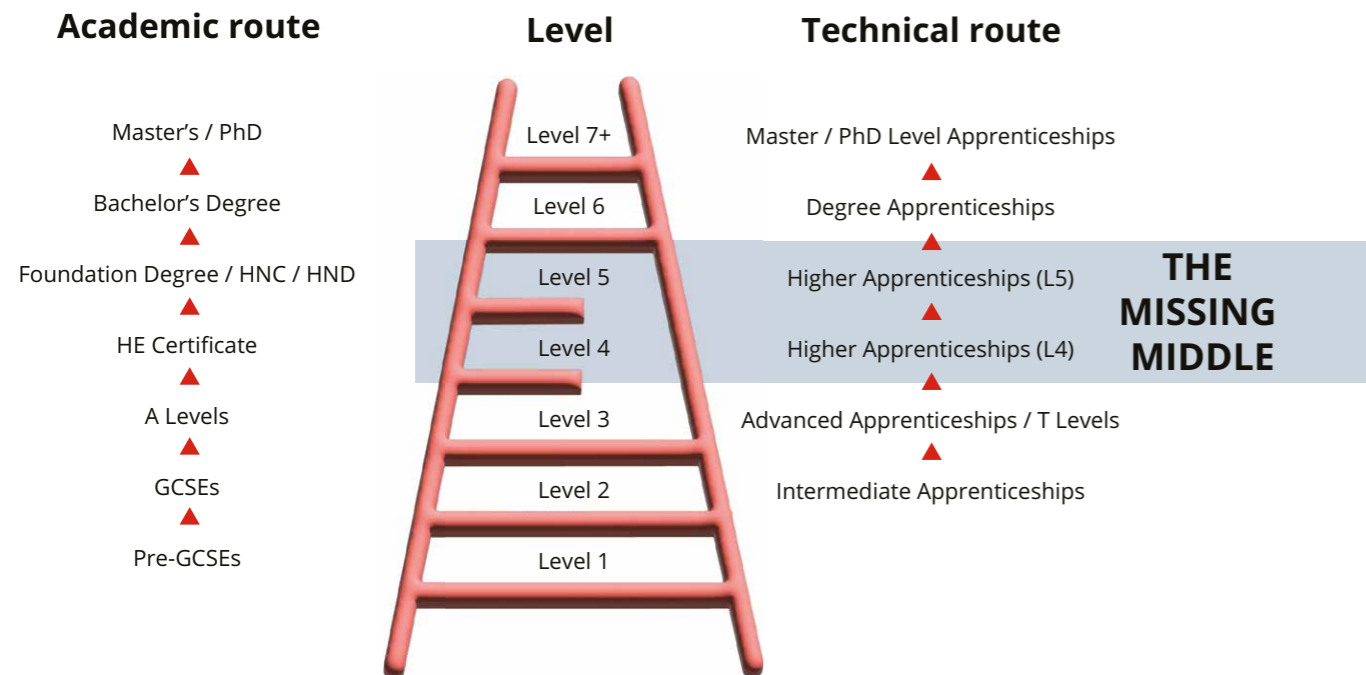
Mainstreaming international best practice: Developing skills excellence

When we consider skills we tend to do so in terms of our organisation, locality or region, and often in the context of Local Skills Improvement Plans. But the UK competes globally for the investment that can drive the economic growth that the UK has struggled to achieve over the last decade. In November 2023 the UK government published the Harrington Review of Foreign Direct Investment which explores the barriers to foreign investment in the UK economy. Skills feature heavily³:

“Skills – particularly at the high end of the education system – are seen by investors as a major UK strength... Feedback from business was more mixed on the quality of skills below this top level, with manufacturing and green industries in particular raising difficulties they had found in finding sufficient skilled workers to meet their needs at middle management level and for technical work.”

The Harrington Review gives us a valuable ‘top down’ insight into the national challenge. From the perspective of global capital – individuals and organisations with the potential to improve our socioeconomic outlook – we have a ‘missing middle’ in terms of the technical and vocational skills required to attract investment.

‘The Missing Middle’ in technical and vocational qualifications



3. Harrington Review of Foreign Direct Investment, November 2023

Mechatronics: A case in point

In mid-March 2024 we assembled representatives to join an international exchange in the Netherlands. Participants learnt a great deal, not only about the UK's strengths – for example, leadership across critical technologies including AI and Engineering Biology – but also where there's room for improvement.

Participants in the event heard from Calum Knott, the WorldSkills UK Training Manager for Mechatronics, and Training & Support Manager for Didactic Services Ltd a mechatronics equipment supplier and an industry partner of WorldSkills UK. Calum shared some of his insights into the fundamentals that affect the UK's ability to compete in mechatronics competitions:

- entry requirements for courses related to mechatronics
- a lack of capital investment in software/hardware meaning that learners - and skills competitors - have to compete against better-resourced countries
- challenges faced by teachers and trainers in terms of finding the time to experiment with new equipment and approaches, and resources that exist that are valuable learning assets for learners
- a shortage of teachers and trainers with up-to-date knowledge of how technology is shaping working practices
- a mindset challenge: a fear amongst learners of taking things apart and experimenting, lacking the confidence that they can put them back together again.



Calum's analysis sets challenges for us all to consider: we'll only achieve improvement by investing in:

- physical resources
- human resources, especially the recruitment, development and retention of technical teachers and trainers
- standards and benchmarking, to include how the most is made of readily available reliable sources like the WorldSkills UK national standards
- a cultural change in our learners, establishing a 'competition' or 'growth' mindset to drive them towards greater confidence and success.

At WorldSkills UK we promote the value of benchmarking our performance in skills competitions against other countries, and specifically benchmarking against countries with similar education systems.

Our colleagues at WorldSkills Europe are familiar with the close collaboration between industry skills 'standard setters' in European countries, and the education and training sectors that supply them. Through our Network of Innovation, we're supporting collaboration between the UK and Europe.

We can also learn lessons from Europe in raising the esteem of technical and vocational education and related professions. For example, the UK's science and engineering councils generally permit learners to register as associate members from Level 3 onwards, but uptake is low. Encouraging Level 3 learners and trainees to recognise themselves as scientists and engineers, on a professional pathway, could help to generate the mindset change that Calum highlighted above. They can also sign up for a 'student registration' with the body that regulates their profession: most professional bodies – for example, the [Science Council](#) – have a student or apprentice registration category that provide opportunities for networking, professional development and careers advice.

To support individual learners and educators to benchmark skills performance against international standards, WorldSkills UK has developed a 'Learning Lab', introduced here.

Designing and delivering a curriculum with intent

WorldSkills UK is well known for national and international competitions. However, less known, and just as powerful is our **Benchmarking Resources** within the WorldSkills UK [Learning Lab](#), a free online portal, a virtual stadium of resources to support the design and delivery of a curriculum with intent. They are designed for educators to use with their learners and include a bank of previous pressure tests (competition tasks) accompanied by WorldSkills UK assessment criteria which help learners develop skills excellence to support progression to further and higher technical study and employment.

They divide into resources to support teaching and learning at the start of the year (**Setting** of learning), resources to support mid-year teaching and learning (**Holding** of learning), and resources that will best support teaching and learning towards the end of the year (**Landing** of learning).

Benchmarking resources on the WorldSkills UK Learning Lab

Set				Hold			Land
Mindset Masterclasses Pressure tests 1-1.5 hours				Developing excellence 2-3 hours			Productivity Skills
3D Digital Game Art	Beauty Therapy Practitioner	Hairdressing	Metal Fabricator	Bricklaying	CNC Milling	Beauty Therapy	Construction
Automotive Body Repair	Commercial Make-Up	Health and Social Care	Network Infrastructure Technician	Digital Construction	CNC Turning	Floristry	Digital and Creative
Automotive Refinishing	Digital Construction	Heavy Vehicle Technology	Plumbing	Furniture and Cabinet Making	Electronics	Culinary Arts	Engineering and Technology
Automotive Technology	Digital Media Production	IT Support Technician	Restaurant Services	Joinery	Industry 4.0	Hairdressing	Hospitality and Lifestyle
Beauty Therapy	Electrical Installation	Laboratory Technician	Website Development	Cyber Security	Manufacturing Team Challenge	Restaurant Services	
				Automotive Body Repair	Mechanical Engineering: CAD	Visual Merchandising	
				Automotive Refinishing	Mechatronics	Metal Fabricator	

At WorldSkills UK, we use international insight from the WorldSkills community and competitions to benchmark excellence. With this insight, WorldSkills UK have produced free on-demand benchmarking resources across many subject areas for educators to download a short or long activity from the Learning Lab. The learners carry out the activity and assess against assessment criteria from the WorldSkills UK National Standards of Excellence (accessed via the [Learning Lab](#)). The results are uploaded into the benchmarking tracker that calculates where each learner measures against local, national, and international benchmarks. There are Five simple steps:

1. Register
2. Download resources
3. Run the activity
4. Assess the learners
5. Upload to the Benchmarking Tracker

The benchmarking tool is our gold standard on-demand resource. It is designed to support excellence and assess learners at the start, middle and end of their programme.

Alongside the gold standard benchmarking resources are other tools designed to measure excellence. These include a bank of pressure tests (competition tasks) accompanied by WorldSkills UK assessment criteria, which help learners understand how they will be assessed at national and international competitions.

Some other on-demand tools which sit alongside the benchmarking resources are benchmarking events such as cyber hackathons, game jams and local/inter-college competition templates for college groups or regions/nations to use. If you are new to running a local/inter-college competition, then we can support in launching one. We offer digital badges (Credly, Pearson) for local competitions being validated by WorldSkills UK.

Chris Hyde – Senior Quality and Standards Manager at WSUK – said of the Benchmarking Tools:

“We often hear educators ask – “how do I teach skills from competence to excellence” or “if only I had a tool that would measure learning skills at the start, middle and end of the programme.”

“We now have the tools and answers for these questions. Educators can use these resources to prepare learners by embedding them into an assessment plan and build their confidence for end point assessment or T level assessments.”



Why not explore and discover the resources available to you on the [Learning Lab](#) that will support effective curriculum design and planning, and teaching learning and assessment delivery?

We want to hear back from educators – including those in our Network of Innovation – about how they use these resources and how we can further improve them.



A new era of science and technology: What it means for future skills development

One of our strategic priorities at WorldSkills UK is to champion future skills. We do this, across the four nations, by working in partnership across education, industry, and UK governments to identify future skills and to inspire – through professional development and competition-based training – excellence in skills teaching, training, and learning. As the international arm of the UK education system, we're able to benchmark against the best in the world, mainstreaming national and international best practice, and to raise standards in the UK.

But to champion future skills, we have to identify what they're going to be. In March 2024 WorldSkills UK hosted a further and higher technical education workforce skills conference that brought together educators, employers, and the UK's scientific community to explore technological changes – and advancements that are shaping working practices – across genomics, bioinformatics, health and life sciences and their implications for the UK skills agenda.

Our hosts, the Wellcome Sanger Institute in Cambridge, opened the conference by illustrating the scale of their activities:

- every day the Institute reads 10,274 billion DNA bases (the equivalent of a full human genome every 12 minutes);
- in 2023 it sequenced the DNA of 1,463 species; and
- it has access to nearly 50,000 high-performance computing cores and 84 perabytes (Pb) of usable storage (that's 84,000 terabytes, or 84 million gigabytes!).

The conference heard from Dr Sarion Bowers, Head of Policy and Advocacy at the Sanger Institute, about their work across six core programmes:

- Cancer, ageing and somatic mutation
- Cellular genetics
- Generative genomics
- Human genetics
- Parasites and microbes
- Tree of life.

The Institute's ambitions are all bold, but the 'tree of life' especially so: the project aims to sequence the genomes of all species of life on Earth. In 1990 when the human genome project started, such an ambition would have been beyond the bounds of technology and time. But now, supported by facilities such as Sanger – which has more sequencing machines than any other lab in the world – it's a realistic ambition.

The Institute's capacity for sequencing allowed it to play a pivotal role in the UK's leadership in response to the Covid-19 pandemic. It continues to sequence Covid-19 variants and to contribute to global health security.

The Sanger Institute needs people with skills we'd typically associate with chemistry and biology to design and drive their studies. They also need engineers and technicians with the skills to use and maintain the technologies that, these days, can undertake in 12 minutes what the human genome project took 13 years to achieve. IT professionals are required to design and maintain the computing infrastructure that allows the resulting data to be stored and processed, before it's analysed by a team of data scientists and bioinformaticians.

The breadth of skills that the Institute requires to achieve its position at the forefront of global biotechnologies is astonishing, and many of those skills are related to new and emerging occupations.

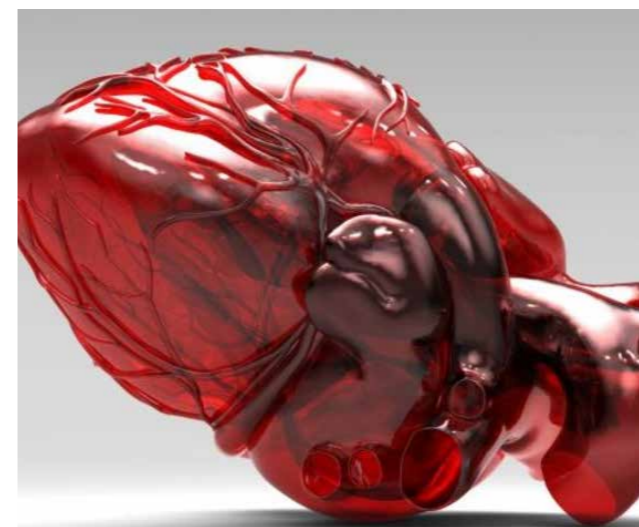
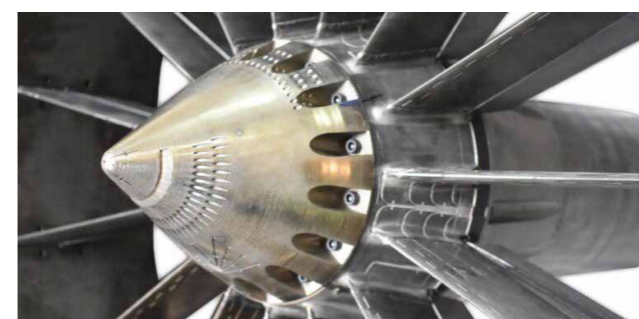
Additive manufacturing: Revolutionising healthcare

Team UK will compete in the Additive Manufacturing (AM) skills competition for the first time at WorldSkills Lyon 2024. If you're not familiar with AM, it's the set of technologies that encompasses '3D printing' and it's revolutionising healthcare and improving the welfare of humankind. Chris Harrison, Create Education, remembers watching a news article about the development of the Covid-19 vaccine during the pandemic:

"In the background there was a fume cupboard unit with a 3D-printed unit on the inside for some of the tests that they were doing to make the vaccine."

That custom-built unit probably enabled scientists to perform repetitive operations more quickly, but 3D-print also has more fundamental uses in modern biotechnology. A lot of 'micro-fluidic' chips that are needed to create new drugs were traditionally made using time-consuming moulding and metal machining processes. Today, Chris says that they can be produced quickly and cheaply:

"Instead of doing that and taking two or three weeks and thousands of points to create a chip, we would just 3D-print the whole thing with enclosed channels."



Working together with biotechnologists and healthcare professionals, AM engineers and technicians are 3D printing body parts that will, in the future, be used in organ transplants, tissue grafts and orthopaedic surgeries. They will mimic bodily functions, be aseptic and resistant to the autoimmune responses that jeopardise traditional tissue transplants, and even deliver drugs without the need for injections.

3D-printing allows affordable scale-models to be created of patient-specific surgical procedures to give surgeons a better insight into how to approach complex orthopaedic operations. And it has driven down the fabrication costs for replacement body parts too: AM can quickly and cheaply produce replacement kneecaps – customised to individual patient's specifications – with a production cost of just £60.

The technology is fascinating, as is the journey that one key innovator in the 'bioprinting' industry has taken. Autodesk – a Centre of Excellence partner – is an American multinational, established in the 1980s, which made its name as a software company and pioneers in Computer Aided Design (CAD). Forty years – and one digital revolution – later, Autodesk is one of the companies pioneering design, visualisation and additive manufacturing approaches that are enabling a new approaches to personalised healthcare.





From competence to excellence

Autodesk's forty-year journey is incredible, in hindsight. But imagine the courage and leadership that their transition from CAD designers to bioprinters has taken, and then imagine:

- what the organisation that you work in will look like forty years from now and
- what skills the learners you are teaching or training today will require in 2065.

By championing future skills, WorldSkills UK encourages technical and vocational education providers to foresee future skills needs, and prepare to teach them. We do so with the help of industry experts such as Chris Harrison from Create Education and a wider network of industry partners who support the work of the WorldSkills UK Centre of Excellence.



Profile: Chris Harrison – Create Education

Chris was introduced to 3D-printing when he was a Chemistry teacher and first used the technology to replace broken classroom resources. He now works for [Create Education](#) – an Autodesk Learning Partner – and uses his technical and teaching experience to help schools and colleges use their AM equipment optimally and buy appropriate equipment for the evolving needs. Chris provides training specifically for teachers, designed to ensure they can train their learners appropriately in AM skills.

Chris, and Create Education, don't just help teachers and learners with technology: they also provide training on the design of solutions and the appropriate application of technologies. Create Education are the WorldSkills UK competition organising partner for additive manufacturing. Part of Chris's role is to support the delivery of technical masterclasses through the Centre of Excellence and he always stresses to educators and competitors that this focus on design and application is critical, especially in international pressure-tests:

"You have to have a look at [the problem], take a step back, give it a bit of time and space and look at the tools that are available and not necessarily jumping down the newest technology, fancy materials or generative design routes: it might be something quite simple."

WorldSkills coaches and contestants consistently say the same thing: the critical thinking skills developed through WorldSkills competitions are just as important as the technical skills demonstrated. In Chris's experience, openness to change is also critical, both in industry and education. An ageing industrial and educational workforce in engineering can be resistant to change: "We see it with engineering in colleges: lots of staff are previously from industry and want to teach things in the same way that they learnt them – but 5 years in engineering education is a very long time and a lot of changes come through. Industry 4.0 technologies are coming through very rapidly: students are very keen to learn those new technologies and we need the skills of lecturers and teachers to keep up."

WorldSkills UK's Centre of Excellence, working with industry partners like Autodesk and Create Education, aim to provide exactly the training and professional development that will power skills improvement and innovation.

[Watch our full interview](#) with Chris Harrison.

WorldSkills Lyon 2024: Building the pathway to excellence

In September a team of 31 young people will represent the UK at the WorldSkills International Skills Competition in Lyon, France. Drawn from across the four nations, those 31 participants represent not only the very best of our technical and vocational talent, but also the culmination of a national approach to skills development, and competition pedagogy, that are central to WorldSkills UK's mission.

In this article we'll introduce the team, explore the benefits of skills competitions for individuals, providers, and employers, and consider what members of our Centre of Excellence can take back to their learners and organisations.

Introducing Team UK

Team UK for WorldSkills Lyon 2024 were selected from a squad of 94, all of whom went through an intensive 18-month training programme to prepare for the 'skills Olympics'. Training for the Lyon team continues, supported by Pearson, WorldSkills UK's official partner for Team UK and led by WorldSkills UK Training Managers. They'll be putting team members through intense preparation, including through 'pressure tests' – competitive, time-limited scenarios that model the conditions under which the team will compete in Lyon.

All four UK nations are represented across the 27 skills that the UK will compete in, which include additive manufacturing, 3D digital game art, health and social care, renewable energy and restaurant services. Ruby Pile from Cardiff and Vale College will represent the UK in restaurant services. Her career journey demonstrates the value that technical and vocational education can provide to people and employers: having completed a BTEC in Hospitality Management at Cardiff and Vale College, she now works in luxury hospitality, providing the service skills that are so crucial to the UK's hospitality and tourism industries.

Even in traditional sectors like hospitality, the skillsets needed by employers change rapidly. Emerging sectors such as renewable energy demand new skillsets, developed first by individuals retraining and transferring skillsets across sectors, and then passed to future generations through the further education and training sector, with skills competitions as an effective catalyst.

As Ben Blackledge, Chief Executive of WorldSkills UK says "we need to use the focus on global skills development at WorldSkills to help meet rapidly changing employer needs in existing and emerging industries".



It works!

The success of competition-based approaches isn't hypothetical: WorldSkills UK has countless examples of the direct benefit brought to individuals and their employers. Adam Kirkpatrick was undertaking a foundation degree in mechanical and manufacturing engineering at Northern Regional College in Northern Ireland, in 2020, when he first came across WorldSkills UK. He's written about his experience in our essay anthology, [Breaking down barriers to opportunity through skills excellence](#), in which he describes his journey from second place in Northern Ireland's industrial robotics competition, to seventh place in WorldSkills Special Edition 2022 in Luxembourg. He has an approach to personal development that demonstrates the value of the WorldSkills UK approach:

"The approach I took was to analyse the latest, most advanced practice in my discipline and benchmark my own work against this. After identifying my areas of weakness, I spent time developing, learning and taking advice from experts and coaches who helped me to become the best competitor that I could be." We interviewed Adam for this article and he discussed some of the skills that he acquired through the process, including:

- Coping with pressure: Adam was encouraged to keep a daily journal, reflecting each day on his performance and discussing areas for improvement with his competition partner and performance coach.
- Interpersonal skills: Adam's communication and 'people' skills improved considerably through his WorldSkills experience:

"Before I was competing, I would have struggled in an interview or talking to a group of people. It's made a big difference to my career: I'm more confident in interviews, more confident when I'm presenting a project or working with a client – I'm more confident to talk to them in both a technical and personal way. I have to thank WorldSkills UK for that."

- Leadership: Adam's also gained confidence in his professional relationships as a graduate engineer. Not only can he 'talk the talk' but, as an industrial robotics engineer with an international standing, he can command the respect of colleagues and is able to "step down, be the leader and work with the people carrying out the work, or, if you need to carry out the work yourself, you know you can".

His employer at the time – a composite door and window manufacturer – benefitted too: "they were keen to give me opportunities to find automation and robotic solutions to improve processes, improve quality and upskill operators and production teams. It was hugely rewarding to use the technical skills honed during international competition to help produce the best-quality products for customers".

You can hear more about Adam's personal journey to *excellence at work* in this [interview](#) with him. He's enthusiastic to share his WorldSkills experience:

"It has really impacted my life and made a massive difference to it, so any opportunity I can get to promote it I'll do what I can: it really makes a difference to people."

Social mobility through skills excellence

In [Breaking down barriers to opportunity through skills excellence](#) Alun Francis – Chair of the Social Mobility Commission and Principal and Chief Executive of Blackpool and The Fylde College – considers the role that the skills sector, and organisations like WorldSkills UK, has in driving social mobility. Questioning the assumption that the "three-year university degree was the best preparation for elite occupations because it developed the generic, abstract intellectual skills required by the modern, post-industrial, knowledge-based economy", Alun's essay explores the positive change in attitudes towards technical and vocational education as a means to support 'short-range social mobility': "inspiring people to improve their lives and those of their families, earning decent incomes and having skills they are proud to demonstrate".

Alun considers the series of 'watershed' reports that have attempted to establish a skills framework for the UK, but argues that it's initiatives like WorldSkills UK's competitions that have driven changing attitudes:

"Showing and telling, seeing and doing – these are the ways employers and learners have developed their interest in alternative routes."

A summer of sport

Through the European Championships in Germany, and the Summer Olympics in France, all eyes will be fixed on the world's greatest footballers and athletes through this summer of sport. We appreciate, when we're watching elite sportspeople, that they're the product of a sporting ecosystem that has its grassroots in primary schools, and flourishes in sporting academies. We celebrate their achievements and – to varying degrees – invest in the systems that support their achievements.

Imagine what would be achieved if we placed the same national importance – and made resources available at the same level – in the skills that drive our economic growth and the social mobility that it has the potential to create.

WorldSkills UK – and every member of our Centre of Excellence – shares an aspiration for the UK to be on the podium, literally and figuratively, at this year's skills Olympics, and for the skills sector to continue to drive personal, employer and economic opportunity and growth.

A message to Team UK



So what advice would Adam – having competed at the highest level for the UK in WorldSkills – have for this year's Competitors? We could all take inspiration from his five key learnings:

- Be open to new and improved ways of doing things.
- Be honest with yourself and others.
- Developing interpersonal skills is just as important as developing the technical skills you need in your profession
- Never stop learning.
- Enjoy the experience.

From competence to excellence

Why not read the WorldSkills UK essay collection – [Breaking down barriers to opportunity through skills excellence](#) – and talk to your colleagues about how you can drive social mobility in your local area, and the part that skills competitions could play?

And don't forget to show your support for Team UK through your social media accounts through the WorldSkills International Competition in Lyon, 10 – 15 September 2024.



Learning Lab resources

WorldSkills UK products play a vital role in bringing learning to life: the journey towards excellence starts with a range of on-demand teaching, learning and assessment resources on the WorldSkills UK [Learning Lab](#).

Our eLearning resources are designed from international best practice and underpinned by an evidenced-based approach that has been internationally proven to improve and support positive outcomes for learners.

They're free to access for registered users and aim to:

- Challenge, motivate, inspire, and raise knowledge of learners.
- Develop professional and technical skills to high levels of excellence.
- Develop your own knowledge and skills with our proven training methodology.



To register for the Learning Lab please click [here](#) or follow the QR code.



WorldSkills UK is registered at
332 Third Floor
25 Wilton Road
London SW1V 1LW

T: 0800 612 0742
E: getintouch@worldskillsuk.org
W: worldskillsuk.org



Charity number 1001586, Company number 02535199
VAT registration number GB945610716

