

# Education toolkit



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## Fun facts: did you know?

- 38% of Nobel Laureates who studied abroad chose to do it in the UK<sup>1</sup>
- **Famous Oxonians** include 28 British Prime Ministers, at least 30 international leaders, 55 Nobel Prize winners, and 120 Olympic medal winners
- Over a million images of rare books, manuscripts from the Bodleian and Oxford College libraries have been digitalised
- Although it represents just 0.9% of the global population, the UK produces **14% of the world's most highly cited scientific research**<sup>2</sup>
- Cambridge alumni include Sylvia Plath, Stephen Hawking, Sir Isaac Newton and Charles Darwin
- The UK has **three of the world's top ten universities** in engineering and technology
- **Oxford's Bodleian Old Library**, known as 'The Bod', is one of the oldest in Europe. Together, the Bodleian Libraries hold over **13 million printed items**





# Introduction



The UK is a world leader in education, from early years through to university, and lifelong learning. It benefits from a **rich heritage** in academia, underpinned by two of the world's most prestigious universities.

It was at Cambridge in 1687 that Isaac Newton published his greatest work, *Principia Mathematica*, laying the groundwork for modern physics. In 1812 at the University of Oxford Charles Babbage, an undergraduate at Peterhouse, developed his first ideas for a calculating machine, thus laying the foundations for the modern computer. Sir Alexander Fleming, who discovered penicillin, is among Imperial College London's famous alumni.

Now those strong foundations are underpinned by academic rigour that has earned a global reputation for **innovation**. The UK's universities and higher education institutions are held to exacting standards by the government, offering the best teaching, support and resources available. When students study here, they can expect to work alongside some of the best minds, using the best technology in the world.

With **over 160 universities** to choose from and limitless courses and study options on offer, the UK offers endless choice for those with high aspirations and specific career goals.

Many teachers in UK universities are industry leaders, and UK universities cultivate industry

relationships that allow students access to practical experience within world-leading organisations. With so many higher education establishments at the **cutting edge of global discoveries** and **emerging technology**, students graduate with insights and experience that are in demand around the world.

The UK's education framework is constantly evolving. **Online learning**, which offers greater flexibility and a customisable learning experience for those seeking to expand their skill set, presents new opportunities for the education sector. Between 2007 and 2019 the percentage of people who reported enrolment in an Online Open Course (MOOCs), grew from 4% to 17%. More recently, online learning has also been adopted rapidly by educational institutions to provide students with ongoing education during the COVID-19 pandemic.

The UK's early-years providers and schools provide international benchmarks for safeguarding and choice. Whilst it may have previously been the names of top public schools that gathered international recognition, the UK now boasts some of the best state schools in the world.

As part of a continued drive to push up school standards, the Chancellor of the Exchequer Jeremy Hunt announced a further **£2.3bn in funding for schools**, both next year and the year after (2023-24 and 2024-25). This brings the core schools budget to a total of £58.8bn in 2024-25, reaffirming the

Government's ambitions to ensure that the UK's education system grows the skills its economy needs.<sup>3</sup>

The education industry plays a significant role in both the British and global economies and international demand for the UK's innovative products and services continues to grow. In markets across the world, the UK's Department for International Trade (DIT) is promoting the UK's world-class education offering and driving demand overseas. In the UK, DIT is supporting businesses and providers in the sector to export their products, services, and expertise.<sup>4</sup>

According to the digital education platform Future Learn<sup>5</sup> figures show that its **education exports are worth nearly £20bn**.<sup>6</sup> Much of this comes from higher education for international students, as well as English language training overseas. As part of its International Education Strategy, DIT is helping to deliver the Government's ambition to ensure education exports reach £35bn by 2030.<sup>7</sup>

The Russell Group, which represents 24 of the UK's leading universities, says its **research-intensive world-class universities** generate almost **£87bn a year for the economy**.

The UK's professional and technical universities find a voice in the University Alliance, which partners with industry and professions to deliver a workforce underpinned by practical, skills-based learning and applied research.

From our world-recognised universities to our innovative teaching approach and the leading minds who deliver it, the UK is well-placed to offer one of the best education portfolios in the world.

<sup>1</sup>Britishcouncil.org

<sup>2</sup>gov.uk

<sup>3</sup>The Education Hub, DfE (Nov 2022)

<sup>4</sup>International opportunities for UK education, events.great.gov.uk

<sup>5</sup>futurelearn.com

<sup>6</sup>Education generates billions for UK economy, gov.uk (Jan 2019)

<sup>7</sup>International Education Strategy, gov.uk (Feb 2021)

<sup>8</sup>Higher education in numbers, Universities UK (Dec 2022)

<sup>9</sup>Education statistics, gov.uk

<sup>10</sup>Universities UK

<sup>11</sup>Universities UK



## Sector in Stats



- In 2020-21, there were **2.66 million students** studying at UK higher education providers<sup>8</sup>
- Through exports such as international students and English language training the education sector generates billions to the UK's economy (£20bn in 2016)
- With a reported 72% growth in 2020, the **UK's EdTech industry** is among the **fastest growing in Europe**
- In 2021/22 there were 29,682 maintained schools (voluntary schools owned by trustees and managed by boards of governors) across the UK – an increase of 38 schools compared to 2020/21
- Between 2020/21 and 2021/22 teacher numbers rose in every part of the UK at every level, except at nursery level across the UK and in primary schools in England<sup>9</sup>
- Staff employed on academic contracts made up 54% of the population<sup>10</sup>
- In 2020–21, **4,528 new graduate start-ups** and 167 new university-owned or part-owned spin-off companies were created<sup>11</sup>
- The UK is ranked **third in the world for published scientific research**, with nearly 200,000 citable publications in 2020<sup>12</sup>
- In 2021, the median, English domiciled graduate salary was £10,000 more than the median non-graduate salary<sup>13</sup>
- In 2018–19, universities across the UK generated **£95bn in gross output for the economy**.
- As part of an additional £750m of funding for HE providers, DfE (Department for Education) is providing **£450m in capital funding** to invest in teaching and learning facilities
- The UK university sector contributed **£52bn to GDP**
- The sector also supported more than 815,000 jobs across England<sup>14</sup>





## Sub-sectors



### Post GSCE study<sup>15</sup>

**A-Levels** or Advanced Levels are two-year subject-based qualification for students aged 16 or older who plan to go to university or want much deeper knowledge of a study area.

In September 2020, the Government rolled out its new ground-breaking **T-Levels courses**, which are broadly equivalent to three A-Levels and are approved by the Institute for Apprenticeships and Technical Education.<sup>16</sup>

Courses have been developed in collaboration with employers and education providers to meet the needs of industry and prepare students for entry into skilled employment, an apprenticeship or related technical study through further or higher education. Subjects include Business and Administration, Education and Childcare and Health and Science, Manufacturing and Engineering and Legal, Finance and Accounting.

**Apprenticeships** are a brilliant option for people of all ages to launch their careers in a huge range of industries or upskill at various levels. More than 640 high quality apprenticeships are approved.

Vocational technical qualifications, called **Level 3 VTQs** are practical qualifications designed with the workplace in mind and are designed to arm students with the skills they need to start their career or go on to higher levels of education.

**Traineeships** are also offered; courses for 16-to-19-year-olds that last from six weeks to 12 months, including a work placement that help young people prepare for an apprenticeship or a job.

### Universities

The UK has been a **leader in academia** for centuries. It is home to two of the world's top three universities – the University of Oxford and University of Cambridge (placed joint third with Stanford) and has one of the **most diverse subject offerings in the world**.

Two of the UK's ancient universities (those founded before the year 1600) are in England, and four are in Scotland. Students can choose from world-renowned historic institutions, cutting edge, innovative facilities and pioneering and progressive specialist research centres across the country.<sup>17</sup>

University College London and Imperial College London are in the top 10 of world university rankings with a further 26 UK universities appearing in the top 200. Four universities in the UK – King's College London, University of Edinburgh, University of Oxford and University of Cambridge rank in the Top 25 universities in the world for Arts and Humanities.<sup>18</sup>

Universities in Leeds, Bristol, York, Sheffield, Glasgow, Newcastle, Southampton, Liverpool and Nottingham and Belfast – as well as other universities mentioned in this document – are all part of the 24-strong Russell Group of Universities. All these **research-intensive, world-class universities** produce **68% of the UK's world-leading research** - worth £34bn a year - teach more than a third of engineers; four out of five doctors and dentists; 50% of linguists; 58% of physical scientists and 63% of mathematicians.

Thanks to traditions in critical thinking, more than one in three undergraduate students who study in the UK obtain a first-class degree.

### Education Technology (EdTech)

Technology is having a massive impact on the future direction of the education sector. With over 1,000 companies providing educational platforms for both children and adults alike, as well as a thriving research and development scene, the UK provides an excellent base for EdTech opportunities.

The **EDUCATE Programme** is the UK's leading EdTech research accelerator, assisting EdTech start-ups in accessing research to develop great educational solutions, and increasing their investment in research and development.

Venture capital investment in London-based EdTech firms increased by 21% to £67m between 2019 and 2020, while £92m was invested in emerging EdTech nationwide in 2020.

#### Artificial intelligence

The UK's Artificial intelligence (AI) market is expected to experience significant growth over the next decade, with machine learning set to add **£630bn to the UK economy by 2035**. AI is also helping to reduce teacher workloads and improve efficiency within the classroom, as automated self-learning algorithms reduce time spent on administrative tasks such as assessing and marking homework and tests, providing feedback, and taking attendance.

#### Cloud-based Learning Management Systems

Learning Management Systems (LMS) provide a key opportunity for investors, as more schools adopt cloud services for use in their provision of educational resources. This helps to ensure students and teachers can access these files outside of the classroom and allows learning materials and homework to be stored in a single platform.

In 2020, over 50% of organisations moved their workload to the cloud, and the global LMS market is expected to grow from £11bn in 2021 to **£28bn by 2026** – a compound annual growth rate of 19.1%.

#### Cyber security

The adoption of technology in the classroom has led to increased concerns regarding privacy and security of sensitive information online. **Cyber security in the EdTech sector is a priority** for both service providers and educational institutions, with a reported 93% increase in cyberattacks targeting the UK's education sector in 2021.

The UK has a large workforce specialising in this area, with over 300,000 professionals employed in cybersecurity in 2021.

<sup>12</sup>Scimago Journal & Country Rank (2020)

<sup>13</sup>Graduate labour market statistics: 2021, gov.uk (Jun 2022)

<sup>14</sup>The economic contribution of the higher education sector in England, Frontier Economics (Sep 2021)

<sup>15</sup>The Education Hub, DfE (Aug 2022)

<sup>16</sup>Institute for Apprenticeships and Technical Education

<sup>17</sup>britishcouncil.org

<sup>18</sup>TES (formerly known as Times Educational Supplement)

<sup>19</sup>Scimago Journal & Country Rank (2020)

<sup>20</sup>great.gov.uk, DfE

<sup>21</sup>Research Excellence Framework (REF) 2021

<sup>22</sup>Response to Autumn Statement 2022, Russell Group (Nov 2022)



## Research and development



The UK is a global powerhouse of science and research. In terms of published scientific research it ranks third in the world,<sup>19</sup> with nearly 200,000 citable publications in 2020 alone.

The UK invests **£6bn each year in research councils and universities**<sup>20</sup> while also supporting a network of **'Catapult Centres'**. By fostering collaborations between industry, government, research organisations, academia and many others, Catapults accelerate the application of research to help emerging technologies become commercially viable.

Universities not only produce the critical thinking required to improve business performance, but they house new R&D facilities that focus on **turning ideas into commercial enterprises**. The UK benefits from a range of top-tier universities such as the University of Oxford, St Andrews and Durham, all of whom directly support research and development.

The **Research Excellence Framework (REF)** provides a unique analysis of research across UK universities. The results of the REF 2021 provide a national picture of world-leading research produced across the breadth of university activity. The outcomes show strong performance across a diverse set of universities – three-quarters of universities have over 15% of research activity judged to be world-leading; the top quarter have at least 41% of research activity judged to be world-leading. Excellence is well distributed across the four UK nations and English regions, all of which showed over 80% of submitted research activity to be world-leading or internationally excellent.<sup>21</sup>

The UK's commitment to world-leading research and development (R&D) plays a key role in the business sector. In March 2022 the Government announced the **largest ever R&D budget, worth £39.8bn**, in a bid to cement the **UK's position as a science superpower and innovation nation**.

Responding to the recommitment to grow public investment in R&D to £20bn a year by 2024/25, Chief Executive of the Russell Group, Dr Tim Bradshaw, said: "Innovation clusters are growing around each of our universities, drawing on their talent and the UK's excellence in research – from advanced semi-conductors in Cardiff to new digital technologies for the creative industries in York. We welcome that the new planned investment zones will now focus on universities to maximise their impact."<sup>22</sup>

<sup>23</sup>great.gov.uk, DIT

<sup>24</sup>TES (formerly known as Times Educational Supplement)

<sup>25</sup>MECD

<sup>26</sup>Research Excellence Framework (REF) 2021

<sup>27</sup>LEO Graduate outcomes provider level data (2019-20 data), gov.uk

<sup>28</sup>UK government's 2021 Longitudinal Education Outcomes (LEO) dataset (2018-19 data), gov.uk

<sup>29</sup>The Times Higher Education World University Rankings 2023 include 1,799 universities across 104 countries and regions

<sup>30</sup>University of Cambridge

<sup>31</sup>University of Oxford

<sup>32</sup>TES (formerly known as Times Educational Supplement)

**Any  
questions?**

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