



Put digital literacy and skills at the heart of education - a call for a Digital Competency Framework

In 2019, the No Longer Optional: Employer Demand for Digital Skills paper by Burning Glass found that 82% of jobs in the UK require digital skills. The digital world is an indelible part of modern life, and this fact has been further highlighted by the way that people have lived and worked during the pandemic. Although there has been an increase in digital use in the last 2 years, the Future in 2021 report by BT says that the digital skills gap in the UK may have worsened during the COVID-19 pandemic.¹



As part of our research at NEN - The Education Network, we have been asking ourselves: is this lack of digital skills in the workforce the result of how and what digital skills are taught in schools in the UK? What are the key factors successfully preparing today's learners for the digital world of employment that awaits them? Is the curriculum term 'computing' skewing everyone's view of what we really need, and should it refer to broader 'digital competencies', including the softer skills of digital and media literacy, more appropriate?

Curriculum

Computing was introduced into the National Curriculum in 2014. It is a foundation subject and LA-maintained state schools must teach it until KS4, although academies and free schools are free not to teach it.

The Primary Computing Curriculum is designed to give children the understanding of fundamental computer skills and develop their computational and creative skills to understand the modern

¹ <https://www.weforum.org/agenda/2022/01/digital-inclusion-skills-gap-business-divide/>

world. At Key Stages 1 and 2 'computing' is really about developing digital skills and literacy, covering a wide variety of topics and activities. Creativity allowed by the Primary Curriculum also lends itself nicely to developing exciting programmes of study, blended with other curriculum subjects and learning opportunities.

On paper this looks good, but in reality, the quality of how this subject is delivered is affected by a number of factors: the knowledge and skill level of the teacher, the school budget dedicated to digital equipment, the training of the teachers and the whole school digital strategy. Furthermore, staff confidence and knowledge are critical in driving a digital agenda in schools. There was recognition from the Department for Education in 2018 that more needed to be done to support teachers with computing skills and education, resulting in the creation of the National Centre for Computing Education(NCCE). In March 2022, DfE funded the NCCE Computing Quality Framework that should help schools review their progress in developing the Computing Curriculum. Both initiatives will need time to bed-in, to see if they will have an impact on the digital skills of those entering employment.



Schools who believe digital skills are important will invest their time and budget to ensure they are embedded across the school and woven into everyday activities. Their pupils develop a high level of digital literacy and confidence. But then what? The next phase of education needs to carry on the good work otherwise the digital skills and knowledge are mostly 'lost'.

At Key Stage 3, typically students will have 1 lesson a week or fortnightly, in many instances taught by non-specialists. Where offered by schools, students have the option of studying Computer Science GCSE at Key Stage 4. If the school does not have the skilled staff to deliver the course, there are no computing options available. The lack of teachers with the ability and passion to teach computing and digital skills at Secondary level is having a real effect on students in school and their potential employability. NCCE is trying to address the teaching skills shortage via funding and providing training for specialist teachers at GCSE and A level. The Computing Hubs also provide CPD networks but both initiatives require proactive engagement from schools.

Computing at Key Stage 4 promotes computational thinking and programming. Remember back to the Primary curriculum that was more creative and holistic? Well, we would argue that, in the main, the more traditional view of 'computing' now neutralises those early broad digital competencies developed at primary school. And what do employers want? Yes, they want competency in using technology but also in creative application and thinking.



In 2016, the Computer Science GCSE was brought in and only 12% (approximately) of students nationally chose computing as an option.² Digital Level 2 VTQ offer a more practical route to computing qualifications and have been in existence since 2017. However, like the GCSE, numbers of students taking the qualifications have mostly declined over five years and the reasons for this are still to be studied.³

For students not taking the GCSE or VTQ, the vast majority will be lacking any further development in their digital competencies and how they relate to the world of employment.

With the recent announcement of no student loan for students who have no English or Maths⁴, this could encourage more students to consider T-Levels and Apprenticeships but does not do much in achieving the parity of esteem. The research paper Disconnected? Exploring the digital skills gap, published by a leading employment and skills think tank, Learning and Work Institute, found that whilst young people seem to recognise just how crucial digital skills will be for them to succeed in the labour market, participation in digital skills training at school, in further education and in apprenticeships has declined.⁵

This raises the question, should digital competencies (and not just computing) explicitly be taught as part of the National Curriculum throughout a young person's education? If so, how will it be achieved?

Trailblazers

Finding a school that puts digital skills at the forefront of their curriculum design is rare to find, but they do exist. The ambition of the Computing, ICT and Digital Literacy curriculum across Outwood Grange Academies Trust (OGAT) sets out to inspire students to be confident in their future-proof ability to use technology. OGAT school communities vary widely, often in low-socioeconomic areas with poor exposure to opportunity.

Schools in the poorest areas of the country have based their curriculum on 'a curriculum for life', with the literal goal of prolonging a student's life. The life expectancy of people in these areas is substantially lower than those in areas of advantage. Included within this curriculum are digital literacy lessons for students, which combine topics that OGAT feels will improve life chances (health, mortgages, politics, careers, travel, etc) with digital skills.

² <https://www.curriculumwide.co.uk>

³ <https://www.bcs.org/policy-and-influence/education/bcs-landscape-review-computing-qualifications-in-the-uk/england-vocational-and-technical-qualifications-in-computing-at-the-end-of-key-stage-4-and-5/>

⁴ <https://www.bbc.co.uk/news/education-60491719>

⁵ <https://learningandwork.org.uk/resources/research-and-reports/disconnected-exploring-the-digital-skills-gap/#>

Tristan Kirkpatrick, Director of Computing, commented:

“The Digital Literacy lessons have been hugely successful. There is scope to deliver many more project-based assignments, but this can often be difficult when traversing the fine line between examination achievement and providing the essential skills that we feel would prolong or improve the life chances of our students.”

Livingstone Academy Bournemouth (LAB)

LAB (part of the Aspirations Academies Trust), a brand new school that opened its doors in September 2021, aims to develop the next generation of creative technologists through a STEAM (Science, Technology, Engineering, Arts and Maths) curriculum. The vast majority of students come from a low-socioeconomic area. To support pupils, they have purchased Chromebooks for every child. Use of Chromebooks includes students playing Minecraft to deliver key concepts underpinned by Applied Transdisciplinary Learning (ATL). ATL is embedded across the curriculum on every level. ATL assignments combine several subjects and run from 3 to 11 weeks in length. These assignments are designed to apply core learning to real-world situations across different domains to ensure student learning is relevant, engaging and challenging.

Sir Ian Livingstone, Founder, commented:

“The ethos of the school centres on learning-by-doing with a focus on digital creativity. We aim to move students from the passenger seat to the driver's seat of technology. I believe children's learning should be contextual and relevant to their world which is interactive and digital. We will equip them with skills as well as qualifications, know-how as well as knowledge, and an understanding of teamwork as well as individual endeavour. Learning-by-doing, collaboration, projects and games-based learning contextualises the learning experience and puts theory into practice. The school will deliver the national curriculum but will also help children become ‘world-ready’ and ‘work-ready’.”

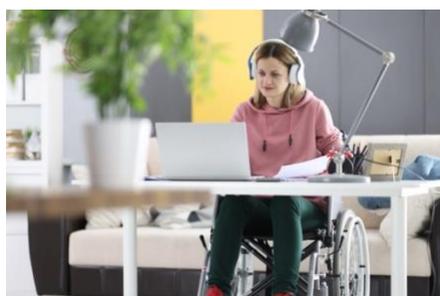
Basingstoke College of Technology (BCoT)

At BCoT students have baked in 1 hour Flipped Learning (independent digital study sessions) on all courses facilitated by Learning Facilitators (who were once librarians) and Learning Technologists (who were once students). It is an integral part of their programme used for study of theory, practice of digital skills, and learning of new skills such as collaboration and curating evidence. This actively prepares students for the expectations of their respective career e.g. beauty learners constructing photo and video evidence on their blogs or healthcare learners recording podcast discussions and debates that go towards assessments. The Flipped Learning sessions serve as the connector between the lessons with their lecturer. They ensure learners are ready for industry expectations through projects.

Scott Hayden, Digital Innovation Specialist, commented:

“Our Digital Strategy 2021-26 aligns our use of technology in a way that values, nurtures, and enhances the human C.O.R.E (Compassion, Originality, Responsibility, and Empathy) skills that can never be automated, grows our digital confidence, and focuses on ensuring we prepare for the Top 10 skills of 2025⁶ (identified by WE Forum) and meet the BCoT Strategic Goals and Objectives to contribute to future industry needs. Overtime, we have built positive relations in the local community and employers are invited to use our impressive [LaunchSpace](#) facility for their own use. LaunchSpace is a multipurpose, dynamic and tech-rich facility that will prepare the future workforce with essential digital skills and enable the delivery of creative and innovative project-based learning opportunities by using industry-standard technology in a flexible learning environment. LaunchSpace prepares the future workforce, develops essential digital skills in students and apprentices, up-skills and re-trains local businesses, improves business ties in the region, and creates pathways and progression routes onto further qualifications.”

NEETs



All of these schools are working to ensure every single student has a pathway when they leave school. Over the last 10 years, NEET (Not in Education, Employment or Training) figures have gradually reduced, however the figures are still too high and there are inconsistencies between certain years and age ranges. Statistics show that the pandemic has had a negative impact with the older groups. The table below shows that NEET figures have generally declined from 2019 to 2020,

however there has been an increase with the number of NEETs who are 18. The [Official for National Statistics](#) (ONS) reported that the number of NEETs (16-24) rose by 39,000 to 797,000 in the final three months of 2020, a period that followed the opening up of the economy in the summer.

Age	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
16-18	9.80%	9.20%	7.70%	7.60%	6.60%	6.30%	6.40%	6.50%	6.70%	6.50%
16-17	7.00%	6.50%	5.20%	4.70%	4.20%	4.40%	4.50%	4.00%	4.30%	3.90%
18	15.30%	14.60%	12.80%	13.40%	11.30%	10.00%	10.20%	11.40%	11.30%	12.00%
18-24	18.70%	18.20%	17.40%	15.80%	14.60%	13.70%	12.90%	12.90%	13.10%	13.40%

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It is apparent that we need to do more to support students with the skills they need to be successful in the workplace and this goes beyond supporting those in full time education. The pace of change is rapid. The World Economic Forum has estimated that by 2025, 85 million jobs may be displaced by a shift in the division of labour between humans. We need to be proactive

⁶ <https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/>

⁷ <https://explore-education-statistics.service.gov.uk/data-tables/fast-track/1c15f472-6e49-42e4-9b1d-6812050d6e8b>

and prepared by taking an inclusive approach that prepares students of all abilities for the digital future.⁸

Conclusion

Despite the topic of digital literacy and skills being widely discussed over the last decade, and many giving their voice to the topic, our research shows that the digital skills gap between education and employment is still increasing.

For those who are brave, they are seizing the opportunity to put digital at the forefront of their educational vision and strategies for their schools and colleges. Some are at the start of that journey, so it is hard to gather evidence of how that is affecting their students' job prospects. Some like BCoT, have seen significant positive impact for their students, across a wide spectrum of courses.

With the rapid growth rate of digital based jobs, there are agencies working hard to address this skills gap, but this work is fragmented. With no systematic approach and policy to join up education, employment and skills.

There are some organisations and agencies that schools can reach out to strengthen their approach to providing students the skills they need to enter the world of employment; this includes but is not limited to organisations such as the National Centre for Computing Education, [Edge Foundation](#), [Digital Schoolhouse](#) and [STEMLearning](#).

The National Computing Curriculum covers programming, algorithms, digital literacy and the wider use of information technology providing the foundation for pupils to acquire further knowledge about artificial intelligence (AI), cyber and data science. However, given only 12% of learners studying Computer Science at GCSE, we consider more needs to be done to increase digital skills within the school environment.

There have been some strides developing resources to support the wider aspects of digital skills. The UKCIS “Education for a connected world” framework provides a comprehensive, all age phased approach, to identify the key skills required at each age phase. SWGfL’s “Project Evolve” has taken this framework with an online safety/ digital competency focus and enhanced each strand with classroom activities and content plus research, to assist teachers in developing the wider aspects of digital skills. Data collected from the first year of schools using Project Evolve makes some interesting findings. These include the considerable drop off in teaching digital competencies in secondary schools (KS2 is the most active age group) and that teaching ‘digital skills’ often goes beyond just computing lessons, being combined with PSHE/RSE teaching particularly to cover aspects like media literacy and online relationships⁹.

⁸ <https://www.weforum.org/agenda/2021/08/3-ways-disrupt-education-bridge-skills-gap>

⁹ <https://swgfl.org.uk/assets/documents/projectevolve-report.pdf>

The current National Curriculum does not cover digital skills and with only 12% of learners studying Computing at GCSE, there is a lack of coverage. We need a balanced curriculum that has a focus on digital literacy and new age technologies. Students, for example, know how to use Alexa, Siri and Google Assistant, so why should they not know how artificial intelligence will impact their chosen pathway?

The Finnish education system has a multidisciplinary curriculum based on 21st century skills incorporating entrepreneurship, critical thinking and enquiry-based learning. We can take positivity from the approach being taken by OGAT, LAB and BCoT and can learn from their experiences. They have demonstrated that digital skills can be at the heart of the curriculum, but this experience needs to be the norm for all students. It can be achieved by our schools if they are given the time, guidance and finance to deliver the curriculum effectively.

What next?

Our vision would be to have a digital competencies Framework for education and training that would have these four core elements running through it. They have been taken from the [AllDigital Manifesto 2021](#) for enhancing digital competencies across the EU:

- Relevant
- Holistic
- Transforming
- Lifelong

We would like to see the creation of a digital competency framework for education, across all Key Stages that ties into a medium-term government strategy to digital. Our suggestion would be to look at combining SWGfL's Project Evolve and NCCE's Computing Quality Framework as a starting point.

Ensure **all** schools have the capacity to embed digital within the curriculum. Capacity would include technical (broadband, equipment) but also through staff CPD and a whole school digital strategy.

Our next generation of young people are in danger of being left behind by this pace of change. We need to act now to ensure that our education system addresses the digital skills problem but without a framework, the digital skills gap is in grave danger of widening further.

Join in the debate:

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