productivity insights network

PIN - Productivity Projects Fund

Small Project Report

# Exploring the relationship between non-cognitive skills and productivity

Report prepared by:

Alex Beard
Dr Joanna Welford
Dr Sally Richards
(CFE Research)

www.productivityinsightsnetwork.co.uk

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## About PIN

The Productivity Insights Network was established in January 2018 and is funded by the Economic and Social Research Council. As a multi-disciplinary network of social science researchers engaged with public, private, and third sector partners, our aim is to change the tone of the productivity debate in theory and practice. It is led by the University of Sheffield, with co-investigators at Cambridge Econometrics, Cardiff University, Durham University, University of Sunderland, SQW, University of Cambridge, University of Essex, University of Glasgow and the University of Leeds. The support of the funder is acknowledged. The views expressed in this report are those of the authors and do not necessarily represent those of the funders.

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## Introduction

CFE Research were commissioned by the Productivity Insights Network to explore the relationship between non-cognitive skills and productivity. Considering the link with educational, social and economic outcomes, CFE Research sought to reflect on existing understanding, and explore potential relevance of non-cognitive skills to the productivity puzzle. This report identifies developments and interventions from other policy areas which seek to build non-cognitive skills, and explores the perspective of policy makers and employers through qualitative depth interviews, giving consideration to how existing policy foci do (or could) relate to broader issues of productivity.

*Summary of approach*

The evidence presented in this report is exploratory, based on a brief review of the literature, and fourteen telephone depth interviews with stakeholders representing public policy, education, employers and the Voluntary, Community and Social Enterprise (VCSE) sector. Interviews were undertaken between November 2018 and February 2019, and sought to understand the importance currently placed on non-cognitive skills (in terms of academic attainment, employment outcomes, and productivity), and the extent to which the development of non-cognitive skills is perceived to be a focus in public policy or labour market practices.

## Executive Summary

Non-cognitive skills encompasses a broad, but historically poorly defined set of behaviours and attributes, which are associated with educational attainment and longer-term labour market outcomes with particular relevance to the productivity puzzle.

The importance of non-cognitive skills (sometimes referred to as employability skills within the labour market context) is widely recognised, but has not necessarily been reflected consistently, either in public policy or labour market practices.

As the world of work adapts to structural trends (such as automation, longer working lives and productivity challenges), there is increasing acknowledgement that the UK economy is suffering a shortage of non-cognitive skills, and that public policy, educators and employers all have a role to play in addressing this skills gap.

A number of recent or current educational initiatives (and a wide range of VCSE projects) have looked to develop non-cognitive skills (either directly or indirectly) to improve educational or employment outcomes. The productivity objective is typically implicit rather than explicit in the rationale for such programmes, which typically reflect social mobility goals.

The drive to understand how non-cognitive skills can better educational and economic outcomes is gathering pace, with evidence of collaborative efforts (between government, educators, and employer representatives) to establish a consistent framework to define, develop and measure these skills in education and beyond.

Making productivity goals explicit rather than implicit within existing policy and research agendas in this field has significant potential to advance understanding of how non-cognitive skills relate to the productivity puzzle. Priority evidence gaps to address include understanding how long-term outcomes relate to productivity, the interrelationships between hard and soft skills, and nuances across sector and skill levels.

## What are non-cognitive skills?

The Education Endowment Foundation defines non-cognitive skills (NCS) as a set of attitudes, behaviours, and strategies that are thought to underpin success in school and at work[1]. Such skills are typically defined in contrast to 'hard skills' such as cognitive ability (e.g. literacy and numeracy) or technical professional competencies. The range of attitudinal and behavioural traits that may be described by the term is expansive. This study did not identify any common

definition or taxonomy for NCSs, which is in itself a challenge for those concerned with their development. One policy maker consulted for this project commented that "*the whole of this territory suffers from conflicting terminology*" (Table 1 below indicates the range of behavioural and attitudinal traits referenced by stakeholders).

*Table 1: Stakeholder definitions of NCS, CFE 2019*

| | | | |
|---|---|---|---|
| Life skills | Resilience | Career management | Problem solving |
| Soft skills | Persistence | Flexibility | Ability to spot |
| Transferability skills | Self-regulation | Adaptability | opportunities |
| Employability skills | Self-control | Relational capabilities | Critical thinking |
| Social skills | Ability to manage | Networking | Creativity |
| Emotional skills | stress | Team work | Managing risk |
| Human skills | Work-readiness | Conflict resolution | Situational judgement |
| Emotional intelligence | Time-keeping | Collaboration | Ethical competence |
| Character | Hard-working | Communication | Motivation |
| Personality | Willingness to learn | Leadership | |

**Why are non-cognitive skills important?**

The Education Endowment Foundation (EEF)[1] found limited causal evidence but a large body of research to suggest a correlation between NCS (such as self-control) and academic outcomes, financial stability in adulthood and reduced crime. The authors concluded that no one skill alone could predict long-term outcomes, suggesting a need for greater understanding of how key skills interrelate, how they can be developed together, and how they can be transferred between areas of a young person's life to influence lasting effects.

The Sutton Trust report "*a staggering recognition among teachers, employers and young people on how important life skills are to the success of our young people*"(p2)[2], with 88% of young people, 94% of employers and 97% of teachers saying that NCS are at least as important as academic qualifications.

A link between NCS and educational and economic outcomes was accepted by all fourteen stakeholders, who identified examples of how this is increasingly recognised within public policy. For example, the Organisation for Economic Co-operation and Development (OECD) will introduce social and emotional skills to its Programme for International Student Assessment (PISA) and Programme for the International Assessment of Adult Competencies (PIAAC). Here we provide an overview of the evidence linking NCS, educational and/or labour market outcomes and productivity, and stakeholders' perspectives regarding how this link is recognised within educational and workplace practices.

*Non-cognitive skills and educational outcomes*

The relevance of NCS to academic outcomes was well recognised by stakeholders. Such skills (referred to by one stakeholder as the 'hidden curriculum') were assumed to transcend subject specific delivery, moderating academic attainment (e.g. through performance under the pressure of exam conditions). The EEF report that when developed in combination, skills such as self-efficacy, motivation, and meta-cognitive strategies appear to be associated with improved academic learning and success in children and young people[3]. In addition to academic achievement, one stakeholder reflected on evidence that schools have more influence on wellbeing - through the impact of NCS such as resilience - than they do on attainment (referencing Lord Richard Layard, co-founder of Action for Happiness).

Despite widespread acceptance of the relationship between NCS and educational outcomes, stakeholders said that the emphasis on academic performance can create challenges for schools. There is a clear sense that a recent focus on knowledge-based education has (to some extent) been to the detriment of NCS development. The Sutton Trust recommends more explicit recognition of soft skills in school league tables and accountability frameworks.

Stakeholders say that the link between NCS and academic attainment should be made more explicit to increase the incentive for teachers/schools to prioritise development of NCS, but suggest that approaches to do so should integrated into existing curricular activities.

*Non-cognitive skills and the labour market*

The contribution of soft skills matters in most, if not all, modern workplaces because of the importance of team-working, collaboration, worker-to worker interaction and worker-to-customer interaction[4]. Moreover, increased skill levels help firms adapt more quickly and effectively to change. This was also reflected by stakeholder interviews.

There was a consensus amongst stakeholders that irrespective of technical skills or core occupational competencies, NCS – or employability skills as they are commonly labelled in this context – play a crucial role in the realisation of workplace potential. Candidates' abilitiy to demonstrate soft skills was deemed to be an important determinant of interview success, and several cited evidence that such skills are associated with an 'earning premium' and economic advantage[5]. Some NCS, such as 'work readiness', have broad relevance across the labour market, but the others are likely to vary by occupation/role.

Non-cognitive skills have long been a consideration for employers, but stakeholders believed that this has not been consistently reflected in recruitment, development, or performance management practices in the labour market. One commented that although a typical director would struggle to articulate exactly how they develop and foster soft-skills within their organisation, this would be implicit in business behaviours (e.g. in business planning and recruitment strategies). Employers typically favour technical criteria or qualifications to shortlist prospective employees and determine rate of career progression, reflecting the relative ease with which such criteria can be measured and compared across candidates.

However, the importance that employers place on NCS is thought to be growing. Cardiff University recently published findings of their analysis of 21 million UK job adverts, reporting that only 18% specified a qualification requirement, with the remainder "*more likely to highlight social qualifications, specific skills and cognitive abilities such as organisational skills or time management – aspects that signal 'job readiness*'"[6]

As policy makers and practitioners prepare for the impact of automation on the labour market, the evidence base for the value of NCSs is also increasing, with the future world of work expected to put a premium on transferable, non-academic skills[7]. A recent survey of London-based employers found that in addition to digital know-how, employers saw soft skills as being hugely important, highlighting that automation would place increasing importance on customer service and effective team working[8].

*Non-Cognitive Skills and Productivity*

The relationship between NCS and positive educational and labour market outcomes was assumed to be indicative of a relationship between NCS and productivity for most stakeholders. Non-cognitive skills (such as flexibility and the ability to innovate) were expected to influence productivity in similar ways to cognitive skills, by supporting "smarter ways of working" and working more efficiently to produce more per hour worked. One stakeholder noted the potential for productivity spill-overs, i.e. the organisational impact where effective leadership or strong team working facilitates the development of NCS (and therefore productivity) amongst an extended network of colleagues. The wider workplace benefits of NCS to well-being and mental health (in terms of resilience and "working smarter but not harder/longer") were also expected to impact on productivity.

The potential for productivity gains associated with NCS development were particularly highlighted in relation to leadership skills. Stakeholders often described leadership as a persistent skills gap, resulting from employee development strategies which promote on the basis of technical performance (rather than managerial) competence. One large employer interviewed reported a correlation between leadership engagement scores and overall

performance ratings measured within teams, assumed to reflect the impact of strong leadership skills on effective team working. Stakeholders also referenced the potential for process innovation led productivity gains, particularly within process-laden settings such as the manufacturing sector.

The possibility that NCS could be associated with (macro level) productivity gains does not seem to be recognised overtly in public policy. One stakeholder commented that "*productivity is a level of detail that people aren't able to talk about because relating education to work is still not articulated properly*'. However, whilst acknowledging that there has not been an explicit focus on productivity, another reflected on how current educational policy objectives around NCS and social mobility inherently relate to the productivity puzzle, referencing the words of Paul Krugman; "*productivity isn't everything, but it is almost everything*".

Measures of attainment and qualification are typically relied upon as educational performance indicators. Despite widespread acceptance that skills beyond qualifications can be determinant of later life outcomes, including earnings, there are significant challenges in understanding and addressing this in educational policy, not least because of variation in how employers define, prioritise and measure NCS. One stakeholder commented that although most managers would instinctively understand the potential impact on productivity, such clear links to performance have not been demonstrated due to the absence of a consistent definition for what is meant by NCS. Regardless of the intuitive link, most stakeholders concluded that there is a paucity of hard evidence for the relationship between NCSs and productivity. There were three notable exceptions[9], although it should be noted that CFE has not been able to review this evidence, so for the purposes of this study it has been considered as anecdotal evidence:

- One cited evidence (reported in the Journal of Education and Work) which demonstrated the positive impact of school mediated interventions on future earnings (measured at 19-24 years). This showed that cultural capital (developed through authentic interactions with the labour market) had the strongest relationship with earnings.
- Another, a large employer with an organisational focus on soft-skills, explained how this approach had been driven by "*overwhelming evidence around the impact of emotional intelligence on productivity, and academic research done over the last ten years which had peaked the attention of senior management teams*".
- One employer representative explained how productivity in professional services is typically measured in terms of employee engagement, citing "academic research" which has established a causal link between employee engagement and productivity.

The literature reviewed provides some evidence of the link between NCS and productivity. Reporting on an analysis of secondary data undertaken on behalf of McDonald's Restaurants, Development Economics highlight the value of soft-skills, arguing that they are essential to creating high-performing and successful organisations and boosting the UK economy[10]:

> *Today, soft skills are worth over £88 billion in Gross Value Added to the UK economy each year, underpinning around 6.5% of the economy as a whole. Soft skills are important to all parts of the UK economy. They make a particularly important contribution to financial and business services, retail, and public services, including education and health. The annual contribution of soft skills is expected to grow strongly over the next five years. By 2020, the annual contribution of soft skills to the economy is expected to grow in real terms to £109 billion, and to just over £127 billion by 2025.*
>
> Development Economics, 2015, p. 3

An evidence review of the UK skills system[11] cites evidence that whilst employers might consider technical skills to be essential recruitment criteria for prospective candidates to fulfil the role, it was NCS that were thought to release productivity of would-be-recruits. An earlier report on the links between skills and productivity[12] cites evidence that both hard skills (typically formal or accredited qualifications) and soft skills (such as interpersonal skills) were

positively correlated with total factor productivity[1] amongst a sample of UK manufacturing firms.

## Who *should* be concerned with the development of non-cognitive skills?

The evidence, both anecdotal (shared by stakeholders) and empirical indicates that NCS are important; to education, to employment outcomes, and ultimately to productivity and the UK economy – and that the UK economy is suffering the effects of a NCS gap. One employer organisation explained that the difficulties in finding work-ready candidates for entry-level roles is a '*perennial complaint*' amongst its members. Economists have predicted that over half a million UK workers across all sectors will be '*significantly held back*' by a deficit in NCS by 2020, with the annual overall expected loss of production amounting to just under £8.4 billion per year[13].

> *"Deficiencies in the UK's current stock of soft skills impose severe penalties on our economy, affecting all sectors and regions of the UK. These skills deficits are not just a minor irritant for employers: they can cause major problems for business and result in diminished productivity, competitiveness and profitability"*
>
> Development economics, 2015 (p.3)

Conversations around the NCS deficit often centre on new entrants to the labour market and the role of education policy in addressing the skills gaps. However, there is an argument that the role of NCS and productivity should be given a greater focus across government, not just in education. One stakeholder, considering the potential synergies between productivity and social mobility objectives, acknowledged that education is "*part of the answer*", but also that in-work training also has a role to play.

> *"If we are serious about improving productivity quickly, we can't focus only on new entrants to the labour market…In-work training has plummeted in the last twenty years. If we only look at the under 24 age group, there will be a lag before we see any impact on productivity."*
>
> Stakeholder, CFE 2019

### *The role for education*

Employers have expressed concerns that the current education system (including schools, Further Education and Higher Education) does not prepare young people with sufficient employability skills to succeed in the labour market[14]. Ninety-four per cent of employers state that life-skills are at least as important as academic results (with approximately one third attributing greater importance to life-skills), but 68% also report that 18 year old school leavers do not have the required skills for the workplace[15]. Young people also recognise the importance of life-skills, with 88% stating that they are at least as important as academic grades. However, only 1 in 5 pupils say that the school curriculum helps them 'a lot' with the development of life skills[9]. In their report on the value of soft skills to the UK economy, similar findings were reported by EY Foundation, who produced a white paper making the case for the implementation of a new School to Work Framework to form part of the school curriculum for learners aged 9–18 years to better prepare young people to transition successfully from education into work[16]. Development Economics also stressed the role for educational institutions not only in terms of development but also in raising awareness of the importance employers place on soft skills, and helping students to better present relevant experience and skills when transitioning from education to employment[17].

Education was universally considered an obvious platform through which NCS could be developed by stakeholders, given the role of education in preparing young people for their future (in which work and economic performance play a central role). Most felt that the importance of NCS was understood, but that implications were not necessarily reflected in practice (where incentive structures do not encourage consideration of how classroom delivery

[1] Total factor productivity looks at the value of goods and services divided by the number of hours, but also controls for differences in the machinery and equipment available, and the skills of employees.

translates to work readiness). One stakeholder noted that despite approximately 60 per cent of private sector employment sitting within one of the 6 million small businesses operating in the UK, introductions to the world of work delivered by the education system do little to develop the skills that are important to thrive and succeed within a small business.

Stakeholders agreed that the development of NCS should be embedded into educational processes, and that delivery should incorporate reflective learning, so that young people know exactly what skills they are developing and why this is important. School provision of NCS development should not be concerned with training young people for specific occupations, but should facilitate authentic workplace interactions to build understanding of the world of work. Career guidance and education also has a role to play in terms of skills matching (recognising that the importance of specific NCSs will vary by occupation and role).

*Skills and labour market*

Focusing only on new entrants to the labour market excludes the huge stock of people already in work who are contributing to existing productivity levels (or lack of)[18]. Whilst recognising the role of formal education, stakeholders also see a clear role for employers (and employees themselves) to nurture and foster NCS, which are both developed and applied in workplace settings. One employer representative shared aspirations that continuous development of NCS will ultimately become commonplace, with life-long learning becoming normalised across the labour market.

Investing successfully in skills development has been shown to drive economic growth. Referencing evidence from the OECD survey of skills (PIAAC) that those who do not have the ability to flourish in the labour market are left feeling unfulfilled, one interviewee suggested that the resulting lack of employee engagement also limits overall workplace performance. Developing the stock of NCS reduces employer costs in recruitment, training time and employee turnover, and improves employee performance on bottom-line business metrics, such as higher sales and better consumer service.[19]

Arguments for the productivity gains associated with the development of NCS span the full spectrum of skill-levels. For example, a study of garment workers in India demonstrated a large net return associated with on-the-job soft skills training (post-programme productivity generated a net rate of return of 256% twenty months after programme completion having accounted for the cost of delivering the programme)[20]. Meanwhile, professional bodies such as the Chartered Management Institute (CMI) stress that employers should invest in training to develop leadership and management skills, citing evidence that poor management and leadership currently costs UK plc £84bn a year in lost productivity[21].

> *Organisations with effective management and leadership development programmes have on average 23% better results and are 32% more productive. 83% of Chartered Managers say they are more productive as a consequence of their training and development, and CMI calculates their average added value to an organisation is £391,443.*
>
> CMI, 2017 (p.7)[22]

For employers, building a consistent and measurable business case for investment in soft skills development is crucial. One stakeholder discussed the need to understand not only how and why an organisation should develop NCS in order to drive productivity, but also how performance can be measured against this goal to capture return on investment in a way that secures support for such initiatives at board level. For example, a lack of measurable KPIs has been a barrier to board level support of employee engagement programmes in the past. However, the emergence of culture tracking tools has given organisations a way to demonstrate the return on investment of these initiatives, with potential application to NCS development.

*Be the business*, established in November 2017 with funding and support from the UK government and some of Britain's leading companies, calls for a business-led response to UK productivity underperformance, identifying SME management and leadership capabilities as a

priority for improvement[23]. One stakeholder suggested that small businesses benefit most by engaging with a mentor. However, making the case for the return on investment for soft skills development is particularly challenging amongst this audience, who typically have limited resources to devote to this. This stakeholder felt that perhaps the most critical lever would be to change ambition in some way amongst small (often low-productivity) businesses, only half of whom[24] are motivated by economic growth.

### Initiatives to develop non-cognitive skills (with potential for productivity gains)

Stakeholders described periodic levels of policy interest in the acquisition of NCS. Examples include early years education, where the 30 hours childcare entitlement serves the dual policy objectives of supporting the labour market and nurturing development of young children, and the impact of resilience on learner wellbeing. The development of character is integral to many well established charitable youth development initiatives identified by stakeholders, such as the Duke of Edinburgh Award[25] and Prince William Award[26], and the government sponsored National Citizens Service[27]. The development of employability skills was considered by most to be a central tenet of existing careers guidance, and DfE's recently published Careers Strategy outlines a particular focus on increasing contact with employers so that every young person gets at least seven encounters with employers across their school and college life[28].

However, there was also a sense that the impetus to develop character and resilience amongst young people is gaining increasing traction in educational policy aligned to a social mobility agenda, with Essential Life Skills understood to be "*the current moniker*" for this. Character development has also been given greater prominence in technical education, where progressive changes and employer input has seen NCS built into occupational standards. In addition to government initiatives, there is a competitive market developing NCS across the Voluntary, Community and Social Enterprise Sector (VCSE), and through youth employability schemes provided by private sector organisations' corporate social responsibility functions.

*Non-cognitive skills and social mobility*

The argument for addressing NCS through social mobility objectives asserts that building character (by providing disadvantaged children with access to the types of extra-curricular activities typically associated with independent schools) will level the playing field on transition to the labour market. Through its Opportunity Area programme launched in October 2017[29], the DfE identified 12 social mobility 'coldspots' (communities characterised by poor social mobility and challenging schools), which would each receive a share of £72 million to boost opportunities for young people. Initiatives included providing all young people in Opportunity Areas with at least four 'inspiring encounters with the world of work' (such as work experience or mentoring opportunities). An additional £22 million of funding was made available to Opportunity Areas through the Essential Life Skills programme to fund extra-curricular activities, such as sports, volunteering and social action projects which help young people develop NCS such as leadership, resilience, emotional wellbeing and employability.

Stakeholders also cited continued interest from current Education Secretary, Damian Hinds. Hinds recently stated that character and resilience are as crucial to young people's future success as academic qualifications, outlining 5 Foundations for Building Character[30];

1. Sport (both competitive and purposeful recreational activities)
2. Creativity (e.g. arts and crafts, writing, coding, cinematography, music composition)
3. Performance (e.g. dance, drama, music, public speaking)
4. Volunteering and membership (e.g. fundraising, litter-picking, structured youth groups such as Duke of Edinburgh, Guides, Scouts, Cadets, etc)
5. World of work (practical experience of the world of work or entrepreneurship)

*Non-cognitive Skills and technical education*

The move to apprenticeships standards and the introduction of T Levels has increased the opportunity to reflect the relevant soft skills in these educational pathways, particularly given employers' input to influence course content. For example, the required behaviours specified by the Standard for a Level 3 Advertising and Media Executive include[31]:

- Flexible problem solver with ability to help the team prioritise effectively
- Shows attention to detail
- Embraces problems as challenges to be solved, displays 'can-do' attitude
- Behaves with versatility and others respond positively to them (they are 'likable')
- Display empathy and patience with a variety of different personality types and others respond positively to them
- Exhibits curiosity about people, their motivations and how to get the best out of them
- Exhibits curiosity about the industry, positive approach to learning
- Shows resilience (e.g. doesn't take things too personally, keeps going through difficult situations)
- Takes responsibility for learning under pressure

Stakeholders speculated that the National Retraining Scheme (announced at the 2017 Autumn Budget) could contribute to the development of NCS when it is introduced, targeting the stock of workers already active in the labour market. The scheme (which Government has committed to launch within the current parliament) is being developed by a partnership between Government, Confederation of British Industry, and the Trade Union Congress to drive adult retraining and learning and respond to structural trends (such as automation, longer working lives and productivity challenges).

*The Voluntary, Community and Social Enterprise Sector (VCSE)*

CFE interviewed representatives of two VCSE organisations concerned with developing employability skills (including NCS) amongst young people. The scale of initiatives which support young people to transition into the labour market is encouraging. However, one VCSE representative cautioned that the sheer number of organisations operating in this space, and the associated competition for funding, can present a barrier to collaboration which may limit the potential collective impact of such programmes.

## Policy direction and potential for cross-departmental collaboration

Describing the policy climate as being at '*inflection points in lots of ways*' - tackling social mobility and ensuring our economy benefits from all the available talent across the labour market in preparation for the future world of work - one stakeholder calls this a "profoundly important time" for understanding the role of NCSs.

A consistent challenge described by policy and employer representatives alike has been the lack of a common framework against which NCSs could be defined, developed and measured, both in education and in the workplace.

> *"The challenge is defining what those skills are and finding the most effective way to foster and promote them otherwise the conversation can be quite far reaching and nebulous. The point of an initiative and how it links to employment and learning outcomes can become lost"*
>
> Stakeholder interview, CFE 2018

Stakeholders described how there has historically been a tendency to rely on "simple heuristics" in the absence of a commonly accepted framework against which to assess soft skills. Work undertaken by the Chartered Institute for Professional Development (CIPD)[32]

identified around 80 different frameworks relating to employability skills, describing these as "scattered and fragmented" but ultimately relating to similar attributes. Youth Employment UK have also undertaken an extensive review of employability frameworks, and considered perspectives on these from representatives of business, education, policy, and the youth sector through primary research. They concluded that a core set of five skills - communication, teamwork, problem-solving, self-management and self-belief – should be used as the basis to establish a common employability skills framework[33].

There is a sense that things are moving in the right direction though, with a representative of the CIPD describing work to establish a common framework as "*an area of burgeoning interest*". Through collaboration with Enabling Enterprise, The Gatsby Foundation, the Careers and Enterprise Company, and Business in the Community (BITC), the CIPD has launched an Essential Skills Taskforce, with the objective of establishing a recognised and broad employability framework which engages and is utilised by both employers and education providers. The Enabling Enterprise Skills Builder Framework[34] (with potential application from primary school to employment) is a model which appears to be gaining some traction. Enabling Enterprise describe Skills Builder as "a rapidly-growing global partnership", collaborating with over 500 employers and skills-building organisations, and stakeholders alluded to plans for research to test whether this model would work as a common framework for employers.

The importance of employability skills is recognised across public policy[35], and collaboration between education and the labour market is not a new concept. As one stakeholder stated, careers education is ultimately concerned with how learning delivered through schools can help in the workplace. The productivity objective was typically described as being implicit rather than explicit in this, in that careers education is about enabling people to better apply their education in the workplace, and "*the collective economic benefit of this is at the heart of the thinking*". Productivity was described as carrying weight in education policy to the extent that both educational and labour market outcomes are considered when making the case for investment, although it was also noted that economic outcomes can be difficult to observe within a dynamic labour market. Furthermore, cross-curricula initiatives concerned with the development of NCS have often been implemented within short policy cycles, limiting the extent to which they have been properly embedded and evaluated. One stakeholder described how 'a whole raft of programmes' have been implemented in schools, looking at resilience in particular, but cautioned that without clear understanding of the objective, approach and evidence behind them, such initiatives can become '*a bit of a buzz word*'.

## What next for non-cognitive skills and the productivity puzzle?

An earlier report from the Productivity Insights Network published in July 2018 noted that "*the relevance of NCS and the complementarities between different types of skills are relatively under-researched*"[36]. Exploring NCS through the lens of education and labour market outcomes, this report highlights the potential relevance of NCS to the productivity puzzle, and considers the ways in which recent policy interest does (or could) add to the evidence base.

The move towards a common framework to define, develop and measure non-cognitive (employability) skills – once established – could provide a strong foundation from which to understand how skills relate to economic outcomes in general terms. However, there is widespread agreement across the literature that skills frameworks are unlikely to provide a 'one size fits all' solution to education or labour market outcomes – or indeed the productivity puzzle. Critics argue that much of the evidence relating to NCS has considered skills in isolation, neglecting the possible nuances of skill interactions, or focused only on short term outcomes[37] (therefore providing limited understanding of the potential impact on productivity).

To truly unpack the influence of NCS, there is a need to recognise variations (and their relative impact on productivity) of skills differentials across a matrix of occupations, overlaying both skill level and sector. The evidence presented in this report strongly suggests that NCS have

potential relevance to the productivity of both high and low skilled workers, but also indicates that the relevance of particular skills will vary by role. For example, NCS which are critical to effective leadership and management will not necessarily impact on the productivity of workers in low-skilled or administrative roles.

The effects of NCS (including the range of approaches that are likely to have the greatest impact on their development and ultimately productivity) might also differ by type of employer. There is evidence that the productivity gap is greatest amongst small businesses, which represent 99.3% of the UK economy[38], and that under-developed leadership and management skills may contribute to this[39]. However, one stakeholder stressed the need to consider the whole value that small businesses bring to local communities and the wider economy, in part *because* they are distinct from their larger counterparts in their attitude and behaviour. Citing evidence that behaviours which might be labelled 'unproductive practice' within the current economic climate (such as resisting redundancies) actually softened the impact of the last recession[40]. This stakeholder cautioned that unintended consequences could result from changing the nature of small business management.

This complexity demands a multi-dimensional approach to understanding the impact of NCS on productivity, which is sensitive to the likely nuances across the skills spectrum. In addition to exploring interactions between NCS, there is a need to understand how they interact with technical or occupational competencies across the skills spectrum, recognising that the mechanisms through which a workers full capabilities determine productivity do not operate in isolation. Segmenting the problem in this way, systematically across sector and skill levels, is a sizeable task. An initial prioritisation of the productivity gap would be helpful to determine where the primary focus might be.

The momentum of research and policy activity to identify how NCS can prepare the labour market for the future world work provides fertile ground for collaborative efforts to measure long-term productivity impacts and the implications for the productivity puzzle.

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