



Developing Non-Academic Skills



This POSTnote explains what is meant by the term ‘non-academic skills’ and discusses the links between these skills and life outcomes, such as employability. It describes how these skills are currently taught and reviews evidence on effective approaches to teaching them, both within and outside the education system.

Background

Non-academic skills exist alongside knowledge and abilities measured through standardised testing, such as numeracy. Although there is no universal definition (Box 1), non-academic skills are generally considered to include attitudes and values (such as conscientiousness), social and emotional skills (such as managing emotions), creative skills (such as innovation), and metacognitive skills (such as time-management).¹⁻⁴

Non-academic skills are associated with a range of beneficial outcomes, including positive self-image, increased empathy, and reduced levels of antisocial behaviour.⁴⁻⁶ These skills are valued by employers and may become more important in the context of increasing automation (where technology replaces human workers) because non-academic skills are more resistant to automation in the near future (POSTnote 534).^{1,7} A 2017 Sutton Trust survey (Life Lessons) found that young people and teachers perceive non-academic skills to be more important than academic skills.⁶ The 2017 CBI/Pearson Education and Skill Survey of 340 organisations reports that businesses prioritise work attitudes more than academic ability when recruiting.⁸

The 2017 Industrial Strategy White Paper committed to improving the quality and diversity of skills in the UK workforce to better meet business needs.⁹ The 2016

Overview

- Non-academic skills exist alongside academic knowledge and can include empathy, communication, and resilience.
- These skills are associated with improved educational, work, health, and wellbeing outcomes, such as higher academic attainment, greater employability, and good physical and mental health.
- Evidence suggests that development of non-academic skills is more effective when teaching is integrated into the regular school curriculum and staff receive training.
- Non-academic skills can also be developed through activities such as sports and volunteering. However, individuals from less economically privileged backgrounds may have reduced access to such opportunities.

Scottish Government Enterprise and Skills Review also proposed aligning the skills taught to young people with business needs.¹⁰ The term ‘skills’ in these reports is applied to a range of subjects, including technical subjects (such as construction or catering). Technical skills are not covered in this POSTnote as they are frequently considered separate from non-academic skills.^{2,4,11-13}

This POSTnote focuses on those non-academic skills that have been linked to outcomes in education, work, and health (Box 1). It reviews evidence on the impact of non-academic skills on these outcomes, the most effective approaches for teaching these skills (in primary school, secondary school, college and university), and how they can be developed outside of compulsory education.

Outcomes

Evidence on the outcomes associated with non-academic skills comes from randomised controlled trials (studies that randomly assign a particular intervention to different groups of people to see how effective it is) and longitudinal studies assessing long-term effects. These longitudinal studies include the National Child Development Study, the British Cohort Study, and the Millennium Cohort Study, which each tracked the lives of more than 17,000 people born in 1958, 1970 and 2000–2001, respectively.¹⁴⁻¹⁶ These studies indicate that proficiency in non-academic skills (in particular self-belief, self-regulation, motivation, and resilience) is

Box 1: Defining Non-Academic Skills

There are multiple definitions, and competing terminologies, for 'non-academic skills' (for example, alternative terms include 'life skills', 'non-cognitive skills' or 'essential skills'). Isolating individual non-academic skills can be difficult as they interact and overlap with each other. For example, the ability to manage emotions is linked to self-control.² Due to this overlap, some of the skills below may fit into more than one category. For example, motivation can be seen as both a social and emotional skill, and an attitude or value. Although often treated as distinct, academic and non-academic skills are also linked. For example, an individual's motivation can influence their academic performance, and creative skills are used in academic subjects (such as Art and Design), which are academically tested.²²

Although non-academic skills are not assessed in standardised academic tests, they can be measured in other ways. Measures include surveys, which can ask individuals to rate their own skills or use questions that provide an indication of skills (such as asking individuals how they would behave in hypothetical situations). Measures can also include expert ratings of skills, such as a researcher rating an individual's teamwork ability during an assigned task.^{2,23,24} The skills outlined below do not represent all non-academic skills, but are examples taken from a range of key sources.^{2,11,25-27}

Social and Emotional Skills

Social and emotional skills are those that individuals use to understand and manage their emotions, communicate with others, and forge and maintain healthy relationships. These include communication, empathy, teamwork, self-awareness, confidence, self-belief, leadership, understanding and managing emotions, resilience, and collaboration.^{1,3,6,28,29} More research has been done to look at the effects of social and emotional skills on different outcomes, compared to other non-academic skills.¹² Social and Emotional Learning (SEL) interventions aim to improve pupils' social and emotional skills, such as empathy, and understanding and managing emotions.^{30,31}

Attitudes and Values

Attitudes and values are the acquired tendencies and principles that guide behaviour. Some research uses the term 'character and virtues' for these skills and refers to the teaching of them as 'character education'.^{32,33} These skills include attitudes to learning, motivation, self-efficacy (the belief in your ability to control situations), tolerance, conscientiousness, citizenship, and respect.^{1,34,35}

Creative Skills

Creative skills are the abilities involved in making something new, such as designing an object or imagining a concept. These skills include innovation, originality, and open-mindedness.³⁶

Metacognitive Skills

Metacognitive skills are the abilities used to influence one's own learning behaviours and strategies. They involve focusing awareness on thinking through selecting, monitoring and planning strategies. Metacognitive skills include problem-solving, planning (including time-management), self-control, and self-regulation.^{2,37}

associated with positive life outcomes, including higher academic attainment, greater employability, increased wellbeing, and better physical and mental health.^{2,17-19}

Although these UK-based longitudinal studies demonstrate a correlation between non-academic skills and positive long-term outcomes, they cannot demonstrate causation, in part because there are many other factors that could have an effect on these outcomes.^{15,20} Evidence indicates that no single non-academic skill produces consistent positive outcomes as these skills interrelate and work together to influence outcomes. Therefore, improving just one skill is unlikely to lead to lasting changes.² The following sections

review evidence on the effects of non-academic skills on individuals' education, work, and health and wellbeing.²¹

Education

Non-academic skills have been associated with a number of positive educational outcomes, including improved educational attainment, staying in education after age 16 years, and an increased likelihood of entering higher education.^{2,25,38} Social and emotional skills (specifically, resilience and self-awareness), attitudes and values (specifically, conscientiousness and motivation) and meta-cognitive skills (such as problem solving and self-control) are also associated with higher educational attainment.^{2,11,25,38} Childhood proficiency in the skills of resilience, conscientiousness, self-awareness, and motivation have been found to be closely associated with increased educational attainment.^{11,26} For example, an analysis of Social and Emotional Learning (SEL) interventions (Box 1) across more than 90,000 students in the US found that teaching metacognitive skills (including self-regulation and problem solving) enhanced academic performance, both in the short-term and long-term, with data collected from 6 months to 18 years after the intervention.¹²

Work

Proficiency in non-academic skills, particularly social and emotional skills, has been associated with positive labour market outcomes, including higher earnings and increased likelihood of being employed. A report from the Early Intervention Foundation found that, in particular, self-control, self-awareness, and self-efficacy skills were linked to increased earnings and job success in later life.¹¹ Analysis of data from the National Child Development Study found that a combination of academic and social skills is associated with higher hourly wages and higher likelihood of employment at age 42 years.³⁸ Additionally, in an analysis of longitudinal studies, the OECD found that in the UK, social and emotional skills were as important as academic skills in their association with improved income and employment.³

Health and Wellbeing

Improving social and emotional skills has been found to reduce antisocial behaviour, the use of alcohol and drugs, and mental health conditions.³⁹ A 2015 Early Intervention Foundation report found that high self-awareness, confidence, self-control and good communication skills in childhood are associated with long-term positive effects on wellbeing, physical health, healthy behaviours (such as exercising and not smoking), and the ability to maintain relationships.¹¹ A 2013 review, commissioned by the Education Endowment Foundation and the Cabinet Office, found that attitudes, such as motivation, also positively influenced healthy behaviours and physical health.²

Effective Educational Approaches

As education is a devolved matter, teaching of non-academic skills varies across the UK (Box 2). However, surveys suggest that the time dedicated to teaching non-academic skills has been falling due to an increased focus on academic assessment.^{6,17,35,40,41} Evidence on the best ways to teach non-academic skills comes from UK and

Box 2: Non-Academic Skills in UK Curricula

- **England:** The national curriculum for primary and secondary education is taught by local authority schools in England (this does not include academies, which make up around a third of schools). The curriculum states that 'all schools should make provision for personal, social, health and economic education, drawing on good practice.'^{50,51} Ofsted assesses the personal, spiritual, moral, social and cultural development of children as part of the overall effectiveness of education within the school.⁵² Personal Social Health, and Economic (PSHE) lessons aim to build young people's 'essential skills' in confidence, resilience, self-esteem, communication and ability to work with others.⁶ However, PSHE is not obligatory in state-funded schools (although it is in independent schools).^{53,54} The 2017 Life Lessons report found that most state schools develop non-academic skills through classroom-based teaching (usually in PSHE lessons) and through extra-curricular activities (such as after-school sports, drama and debating).⁶
- **Northern Ireland:** The curriculum requires primary and secondary schools to develop skills such as employability, personal development and moral character through Learning for Life and Work lessons.⁵⁵ There is also a focus on developing skills, such as communication and self-management, across the curriculum.⁵⁶
- **Scotland:** There is no mandatory curriculum for primary or secondary schools in Scotland. However, the Curriculum for Excellence aims to help those aged 3–18 years become 'successful learners, confident individuals, responsible citizens, and effective contributors'.⁵⁷ The Scottish Qualifications Authority has also developed a Skills for Learning, Skills for Life and Skills for Work Framework, which has associated qualifications (including the Wider Achievement Awards for activities such as sport, mentoring and voluntary work).⁵⁸⁻⁶⁰
- **Wales:** The Welsh Government will introduce a new curriculum for primary and secondary pupils between 2022 and 2026. It aims to develop well-rounded individuals through improving non-academic skills such as creativity, attitudes and values.⁶¹ This will be achieved through areas of learning and experience, such as expressive arts.⁶²

international programmes. This section reviews evidence on general principles for developing non-academic skills, and interventions that have been shown to be effective at primary, secondary, further, and higher levels of education.

General Principles

A 2013 review of over 200 studies for the Cabinet Office concluded that compulsory education (primary and secondary levels) can develop non-academic skills, in particular self-belief, self-efficacy, perseverance, motivation, metacognitive skills, and social skills.² Teaching may result in greater improvements in some non-academic skills, such as social and emotional skills, compared to academic skills, especially during adolescence.²⁶ In the UK, more research into effective interventions has been undertaken in primary schools than in secondary schools.³⁰ However, it can be difficult to isolate the effects of an intervention from other factors (such as school culture), which may influence non-academic skills.⁴²⁻⁴⁴ There have also been difficulties replicating successful programmes from one school to another, particularly when using programmes from different countries (Box 3).^{5,45} The way in which these programmes are implemented has been identified as one of the most important factors affecting programme outcomes.⁴⁶

Stakeholders suggest some general principles for successful interventions, including making the teaching of

non-academic skills part of routine education and using interactive teaching methods (such as games, role-play and group work).⁴⁷ Other principles include adopting a whole school approach, which includes classroom interventions, teacher training, embedding skills into the school ethos, and engaging parents and the community.⁴⁷⁻⁴⁹

Primary Education

The 2013 Cabinet Office review identified critical time windows for the development of certain non-academic skills. For example, it suggested that self-control may only be significantly influenced up to the age of 10 years. However, there has been less research on the effectiveness of later interventions.² National and international research has studied the effects of SEL programmes (Box 1) in primary schools. A meta-analysis of 120 school-based US interventions with children aged 4-11 years found that SEL programmes improved students' test performance as well as their social and emotional skills.⁴ However, when trialled in the UK, the SEL programme Promoting Alternative Thinking Strategies (Box 3) reported no long-term effects on academic attainment, despite finding positive effects in the US.⁶³ UK programmes to improve other non-academic skills may show academic benefits. For example, the programme Philosophy for Children (P4C) involves group discussions about ethical or philosophical topics, such as fairness and truth. A trial of P4C in 48 UK schools found that pupils aged 7–8 years made approximately 2 additional months' progress in reading and maths across the school year.⁴²

Secondary Education

Since 2015, the annual CBI/Pearson Skills survey has found that employers value attitudes to work and behaviours, such as self-moderation, above academic ability.^{8,64,65} Secondary schools and colleges are obliged to offer work experience opportunities and can also provide other activities (such as volunteering), which can help to develop non-academic skills.⁶⁶⁻⁶⁹ The 2017 Life Lessons report surveyed over 1,000 teachers and interviewed over 2,500 young people. It found that 48% of teachers in secondary schools engaged pupils in SEL (Box 1) compared with 78% in primary schools.⁶ Furthermore, in a survey of 255 secondary school teachers, 80% stated that the current focus on examination has hindered their ability to equip students with a range of non-academic skills to prepare them for future challenges and opportunities.³⁵

Although UK evidence is limited, international research suggests that secondary school teaching of non-academic skills can be effective. For example, a meta-analysis of 93 US SEL programmes (Box 1) for young people aged 11–18 years reports evidence for improved academic performance, behaviour and attitudes to learning, as well as fewer conduct problems and lower levels of emotional distress.⁴

University

It is difficult to assess the way universities develop non-academic skills because they operate as autonomous institutions. Surveys of employers indicate concern over graduates' attitudes towards work, self-management, and resilience.^{6,8,64,65} The 2017 Life Lessons survey found that

Box 3: International Programmes Teaching Non-Academic Skills**Promoting Alternative Thinking Strategies (PATHS)**

PATHS was developed in the US using a series of lessons to teach topics such as understanding and controlling emotions and empathy for others.⁷⁰ UK trials have involved pupils aged 9–11 years who received the PATHS programme twice weekly in 30–40 minute lessons, usually in slots allocated for PSHE.⁴⁴ In US and UK trials, PATHS was shown to improve behaviour and to help children to understand their emotions and collaborate.^{45,71} Although positive effects on academic attainment were found in the US trial,⁷⁰ this was not found in the UK trial. One proposed explanation for these different results is that UK teachers struggled to deliver the PATHS programme at the recommended frequency due to a lack of time.⁴⁴

Changing Mindsets

Changing Mindsets is based on a US-developed intervention called Growth Mindset. It aims to help children understand that intelligence is a quality which can be developed rather than something which is fixed. US trials of students, aged 11–22, found that metacognitive skills (abilities used to influence one's own learning) are linked to increased resilience against setbacks and higher grades.⁷² The Changing Mindsets programme involves professional development for teachers and six workshops for children delivered by university students and local organisations.⁴³ A UK randomised control trial involving 286 pupils aged 9–10 years, found that pupils made an average of two additional months' progress in English and Maths across the school year.⁴³

52% of employers think that graduates have the right social and emotional skills for the workplace, compared with 64% who think this about apprentices.⁶ A 2016 review by the Department for Business, Innovation and Skills found that computer science and STEM graduates have unemployment rates of 11.7% and 8.4% after graduation, respectively.⁷³ Unemployment was worse among students who lacked awareness of the benefits of developing non-academic skills alongside their technical knowledge.⁷³

In 2016, the Higher Education Academy produced a framework for developing employability skills, which recommends embedding employability in higher education culture.⁷⁴ Many universities are focusing on these skills and a 2017 survey by the Higher Education Academy found that more students are now able to recognise the non-academic skills they developed during university compared with 2015 and 2016.⁷⁵⁻⁷⁷ The British Academy, in an assessment of competencies developed in the arts, humanities and social sciences, found that these subjects develop social and emotional skills, metacognitive skills, and creative skills.⁷⁸

Non-Academic Skills Outside of Schools

Non-academic skills can also be developed outside of formal education in extra-curricular activities, work experience, and through the involvement of parents.

Extra-Curricular Activities

Extra-curricular activities (including volunteering, outdoor activities, sports, and debating) have been shown to foster non-academic skills, such as confidence and communication (Box 4).^{6,35,47,79,80} These activities are most effective when they are structured, use manuals or workbooks, and have guided learning hours.^{43,80}

The 2017 Life Lessons survey found that 78% of teachers said that their schools ran volunteering programmes. However, only 8% of students reported volunteering.⁶ Participation in extra-curricular activities varies depending on economic background, with 66% of young people from affluent backgrounds taking part compared to 46% of those from less economically privileged backgrounds.^{6,81}

Work Experience

A survey of over 18,000 organisations for the Department for Education found that 65% of employers agree that work experience is an important factor when taking on new recruits.⁸² Employers perceive work experience as an effective way to help young people gain relevant workplace skills, including communication, motivation, and good attitudes to work.^{6,83} Secondary schools are obliged to provide students aged 16–19 years with work experience opportunities, and colleges must have structured careers programmes that may include work experience.^{66,84,85} However, a response from the Federation of Small Businesses to the House of Lords' Social Mobility Committee inquiry suggested that young people from economically disadvantaged backgrounds may not have access to the social connections or financial support often required to undertake work experience.⁹⁰

Parental Involvement

Research has shown that positive proactive parenting (where parents anticipate and respond in advance to a child's behaviour) is associated with high self-belief and social competence in children.⁸⁶ Interventions in the home can improve parents' academic and non-academic skills, which has positive effects on the non-academic skills of their children.⁴³ For example, a 2017 report for the Government Office for Science found that supporting parents through programmes in maths and literacy helped promote positive attitudes to learning across the entire family, resulting in a positive effect on children's attitudes and values.⁸³

Box 4: Examples of Extra-Curricular Programmes**Girls on the Move Leadership Programme**

The Girls on the Move Leadership Programme supports projects that provide opportunities for girls and young women (aged 7–25 years) to participate in sports, enabling them to gain the skills and experience needed to lead activities in their communities.^{47,87} An evaluation of 289 participants showed that the programme improved young women's confidence, communication and leadership skills.⁴⁷ Young women who went on to lead activities in their communities after the programme showed more confidence than other participants at a six-month follow-up.⁸⁸

Hindleap Warren Outdoor Education Centre

The Hindleap Warren Centre runs residential and day courses that provide individuals aged 7–24 years with opportunities to develop their social and emotional skills through outdoor activities.⁸⁹ The programme has been shown to improve participants' confidence, leadership skills, emotional control, and open-mindedness.⁹⁰

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- ⁹⁰ [Social Mobility Committee of the House of Lords \(2015-2016\). *Inquiry into the Transition from School to Work for 14-24 Year Olds. Written Evidence Federation of Small Businesses*.](#)