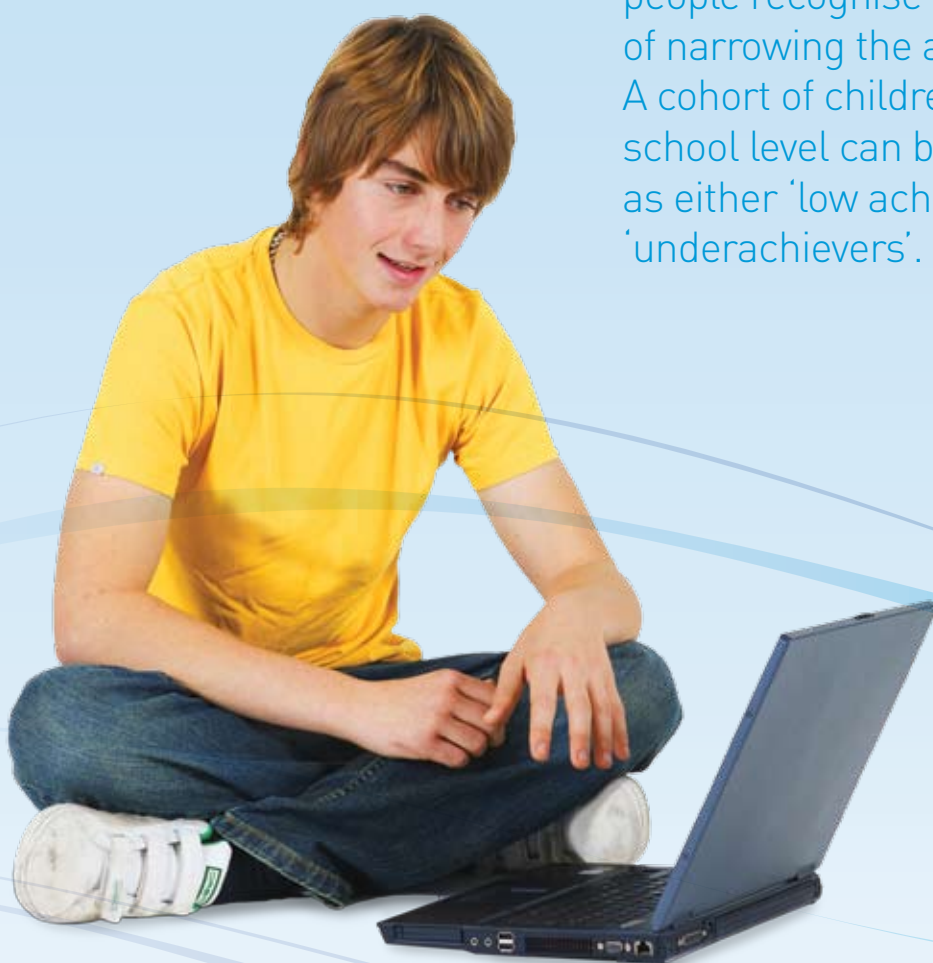Becta
leading
next generation
learning

Messages from
the evidence:
Narrowing
the gaps

Many professionals who work to improve the lives of young people recognise the challenge of narrowing the attainment gap. A cohort of children at secondary school level can be classified as either 'low achievers' or 'underachievers'.

The challenge

Teachers recognise a set of characteristics of young people who are low or underachievers.

Tries hard

Unhappy · Non BMT

Poor work ethic

Bad attitude

Lonely

Poor attention

Disregard for learning

Reading difficulties

Inability to set own targets

Poor attendance

Timid

School phobic

Attention seekers

Socially isolated

Non-compliant

Performing below group norms

Poor locus of control

Learning difficulties

Lack of personalised learning

Erratic · Antisocial

Disregard for others

Low achievers

Underachievers

Poor social skills

Performing below potential

Disengaged

Grounded in reality

Surface learners

Unchallenged

Poor peer relations

Resilient

Tired of learning

Low self-regard

Challenging

Bored

Confused

Confrontational

Poor motivation

Withdrawn

Disorganised

Unfocused

Easily influenced

Easily distractible

Poor teacher relations

Disruptive

What are the underlying factors and how can they be tackled?

Some young people fail to benefit from education for a complex mix of factors including basic intellectual and emotional capacities, socio-cultural background and the quality of environment. The first challenge is to ensure that young people engage with learning. Those who are not motivated to learn will under-perform no matter how able they are. The use of technology motivates disengaged young people to engage in learning due to the use of richer media and also the rapid individualised feedback that technology can provide.

External pressures such as peer pressure can lead to educational alienation. The use of technology – particularly if it is familiar – can narrow the gap between school and the rest of life experience.

Gaps in personal competencies

- The lack of routine in some homes leads to culture shock when children first come to school. Technology can help develop the skills that are essential for a successful school experience, such as paying attention to teachers and taking turns with other learners.

- There are tools and applications to support young people who are dyslexic, dyspraxic or on the autistic spectrum. Simple assistive technologies or teaching techniques using technology can make a huge difference to engagement for individual learners.

- Children with poor inhibitory skills are often seen as being disruptive and out of control – but they can be taught social skills using appropriate software (see case study). Young people who are underachieving need encouragement to stay focused and stick with a task: frequent feedback and rewards have been shown to increase time 'on task'.

- Self-efficacy, the belief that you can achieve, is strongly associated with effective learning. Those who are motivated must learn engagement and persistence. The evidence shows that all but the most able students have to be taught how to recognise and use feedback to improve results. Feedback is at its most useful when it rapidly follows actions and is presented in a form that the learner understands; for example, the use of digital cameras to capture the execution of a badminton shot or the use of a whiteboard to capture responses to a quiz. Game-based learning can offer useful opportunities here.

> Young people from socially disadvantaged backgrounds are most at risk of failure: but these young people are often the most positive and appreciative of the technology available in their schools.

Creating a positive response to learning using technology

- Speaking though technology allows more young people to contribute to debates: one school uses 'question wall' software outside lessons to support understanding. For example, in a project on religion a question wall was set up on which young people can pose questions, answer other people's questions and share resources. Teachers monitor it and also pose additional questions.

- Many teachers said that adaptive assessment software such as MyMaths was something that they found valuable as it gives young people immediate feedback on their performance. Teachers used the facilities to vary the level of complexity of the work to provide more personalised learning. Young people could complete a piece of work more than once and would often do so, to improve their score as an element of self-competition and improvement.

- In one primary school children who are not integrating well and require social, emotional and behavioural support are withdrawn to 'nurture units' to work on social and emotional aspects of life. They have found that technology, particularly the Nintendo Wii, is very effective in developing hand-eye co-ordination and balance but also in developing their self-esteem and group cohesion.

'ICT enthuses and excites children; electronic tasks seem more exciting and stimulating in many cases. Although a good mix of computer activities and practical activities works best!'

Case study ⊙ **Integrating David: gaps in personal competencies**
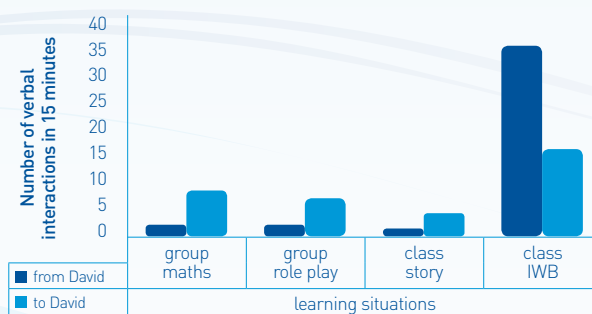
The gap

David, who is diagnosed as being on the autistic spectrum, attends his local primary school. As an able boy, his problems are not related to his thinking ability, but he has severe problems mixing with and relating to his peer group. As a result, his peer group has found it difficult to communicate with him and, on the whole, ignore him. He has been placed at a table of supportive peers, but interaction is sparse and largely one-way: other learners speak to David, but they get little response.

Using technology

The introduction of an interactive whiteboard (IWB) has facilitated interaction between David and his peers. David's interaction with other children is minimal without the IWB, but is at normal levels when he uses the IWB to explain his ideas.

Why it works

Talking though the IWB moves the focus from 'me' to the ideas and this is a help to David. Equally David's increased ability to respond results in more questions and comments flowing from his peers. In essence, David and his peers meet in a shared safe space provided by the IWB. This is a space where the rules of interaction are less ambiguous and confusing for him.

Level of interaction between David and his peers

	group maths	group role play	class story	class IWB
■ from David				
■ to David		learning situations		

Number of verbal interactions in 15 minutes

Case study Aiding listening skills: gaps in opportunity

The gap

Many low and underachievers have weak basic cognitive skills: they are not prepared for the act of learning.

This lack of competence often leads to frustration and disaffection in school. However, these skills can be developed effectively through training. The results can be very positive – not just for the individual – but for the whole class.

Using technology

One West Midland school targets the ability to attend and listen. A ten-week, half-an-hour a day listening programme is provided – via computer – for those children who are finding it difficult to simply listen. The school reports improvements in listening skills, ability and confidence.

An 'audiogram' is computed for each child. The audiograms for one student are shown below. The grey zone shows normal performance.

This graph shows the learners results before and after taking part in the listening programme.

The learner was diagnosed as being 'hearing impaired', as shown by the red line dropping below the 'normal' zone. The blue line shows the results after the listening programme. Hearing remains in the normal zone, allowing the student to engage fully with the class.

Why it works

This case study shows seemingly intractable problems can be addressed through brain training. The listening programme has been successfully used to reduce behaviours associated with attention deficit hyperactivity disorder (ADHD). It trains children to inhibit their immediate response to any situation and to reflect before speaking or acting. The effectiveness of such cognitive training is well documented.

Figure 3: The audiograms show that hearing is improved

McFarlane and Trigg (2008) found that data from interviews with teachers and learners and from student surveys indicated a belief that the use of technology devices had a positive impact. Specific mention was made of revision, drill and practice, concept development by iteration and extended writing, building confidence and contributing positively to attainment. The use of video for paired analysis – for example of an aspect of skill or performance in PE or dance – has raised skill levels. Similarly, the use of audio in modern foreign languages has been positive in developing confidence and competence.

Discipline – improving results by monitoring behaviour

Most schools now use some form of information system for monitoring and analysing learner behaviour, achievement and progress but what can you do with this data to narrow the gap?

Persistent absenteeism is a factor in academic underachievement; a first step to effective learning is regular attendance. Providing digital feedback from teachers to parents is reducing absenteeism in a number of schools.

There are powerful technology-based behaviour management solutions that help schools record behaviour incidents, communicate these incidents instantly via email to relevant parties (HOYs/HOFs/ form tutors/ parents etc) and perform useful analysis to support intervention and improvement. Such tools give schools the chance to streamline the recording of behaviour data and the instant ability to communicate this information to the people who need to know fast.

Analysis by time, teacher area and subject can identify best practice and share this information quickly and easily to drive the improvement agenda. Schools can easily record good and bad news events (perhaps using a traffic light system) and teachers aim to give out more positive than negative messages. Schools have the power to communicate to anyone who needs to know how a child is behaving day to day, thus engaging teachers, parents and young people in the change process.

The whole school can analyse patterns and trends in behaviour and consistency can flourish in the implementation of a school's behaviour policy because it is a powerful database which keeps the school on top of their behaviour agenda. The data can be used to support discussions at teacher, parent, learner meetings. Targeted programmes of work can be produced for each individual. Use with underachieving Year 10 learner has increased the percentage of pupils attaining five GCSEs.

Case study

Improving results by monitoring behaviour: gaps in achievement

The gap

A vital first step to effective learning is regular attendance at school. Persistent absenteeism is a factor in academic underachievement. Many schools use technology to monitor absences, but in this Cambridgeshire school they have had particular success.

Using technology

One 11–16 technology college has swapped a paper-based system, which focused on bad behaviour, for software that records both good and bad learner behaviour. (The system is based on five 'levels' of good and five 'levels' of bad behaviour.) Parents are notified by email or post if their child is given a high score (three or more) for either good or bad behaviour. Learners and parents also receive a weekly summary.

Behaviour tracking was used to support specific campaigns. For example, the school had a successful campaign to eradicate chewing gum from surfaces around the school.

At the end of Year 10, the school identified underachieving learners and designed a personalised programme of support for each. Every learner was allocated a personal mentor and his or her progress was monitored throughout the year. This has allowed the school to increase its percentage of learners attaining five GCSEs.

Why it worked

The detailed knowledge of each pupil provided by the new system allowed teachers to produce a targeted programme of work for each individual. The learner received quick notice about when things were going right, and when they were going wrong. The first was motivating and the second helped individuals to correct mistakes and bad behaviour before they became too entrenched.

Relevance – authentic learning

The need for meaningful or authentic learning to engage all young people, but particularly those who are showing limited benefits from the education system, is well established.

A sense of ownership of the learning process is stimulating to all young people but can be particularly powerful when working with more able but disaffected learners.

- A Year 6 literacy session involved learners in parallel classes writing shared reports about the Antarctic on the interactive whiteboard. When each class had prepared their report there was a tick box on their half of the split screen for them to register they were ready to exchange files with the parallel class. They then received, marked and returned the other class's report. The young people commented that their teachers were beginning to let them use the whiteboards now, since the teachers had become more confident themselves.

- A set of 'challenges' was set for Year 7 learners such as providing a business plan to rid the school of litter. Teams were asked to research, report and create a five minute PowerPoint presentation to present their ideas in front of a panel of judges. Each learner self-assesses their skills to see where they can fit into the team. The assessment helps young people to fit into the team by using their individual talents.

- At secondary level, one school has identified a problem group of underachieving, economically disadvantaged white boys. The boys work on practical projects and are encouraged to think more widely about their career options. For example, if they dream of becoming a footballer, they are made aware of other options in this field such as being a linesman or a sports physiotherapist. The boys report back and present a PowerPoint presentation to parents.

One school says: "By focusing on support for low and underachievers, we have managed to capture, enthuse and sustain educational development. The benefits of making links to authentic learning particularly with diploma learners, where they can see the practical benefits of using technology to support learning, has proved rewarding."

About this document

Research sources

Diamond, M C (2001) 'Response of the Brain to Enrichment', New Horizons for Learning

👆 **www.newhorizons.org/neuro/diamond_ brain_response.htm**

Gladwell, M (2008) Outliers: The Story of Success, Allen Lane Ofsted (2009)

Why Some Schools Excel Against the Odds Where Others Struggle

👆 **www.ofsted.gov.uk/Ofsted-home/Twelve-outstanding-secondary-schools-Excelling-against-the-odds**

Mobile Learning: Structures, Agency, Practices. Pachler, Norbert, Bachmair, Ben, Cook, John (Springer 2010)

Pintrich, P R (1999) 'The Role of Motivation in Promoting and Sustaining Self-Regulated Learning', Educational Research, 31, 459-470 Steer, A. (2009). Review of Learner Behaviour Final Report DCFS.

👆 **www.teachernet.gov.uk/wholeschool/ behaviour/steer/**

Susskind, J E (2005) 'PowerPoint's power in the classroom: enhancing learners' self-efficacy and attitudes', Computers & Education, (45) 203-215

Underwood, J, Banyard, P, Betts, L, Farrington-Flint, L, Stiller, J, Yeomans, S, Narrowing the Gap: Literature Review, Becta

👆 **http://partners.becta.org.uk/index.php? section=rh&catcode=_re_vi_ng_03**

Zull, J E (2002) The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning. Stylus Publishing

👆 **www.newhorizons.org/neuro/neu_review_ zull.htm**

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👆 **www.becta.org.uk/homeaccess**

Developmental Practitioners' Association

👆 **www.brainshift.co.uk**

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👆 **www.learning2go.org/**