

Report summary

Tackling the challenge of low numeracy skills in young people and adults

Both literacy and numeracy are fundamental skills, and national data demonstrate that levels of these basic skills have increased over recent years, both for young people attending post-16 education and training and in the working population as a whole. However, around one in five young people still enter the workplace without the numeracy skills they need for success, only around half of 16–18-year-old learners who enter for numeracy qualifications at level 2 are currently successful, and an estimated quarter of the economically active adults in England are still below this level of numeracy.

This survey examined the quality of numeracy provision for post-16-year-olds in programmes up to and including level 2 (GCSE equivalent). Between May and November 2010, inspectors evaluated numeracy programmes in 59 providers. These included colleges, independent training providers, local authority providers of adult and community learning, prisons and Probation Trusts. Inspectors looked at numeracy provision that was integrated within part-time and full-time vocational programmes, as well as discrete numeracy courses.

Of the 35 providers that offered full-time vocational provision, only 16 had good arrangements for initial assessment. Weaker providers did not assess the numeracy needs of all their learners on vocational programmes and they did not have a clear strategy for promoting numeracy. The tendency was to 'encourage' learners to take up numeracy, rather than to challenge learners' reluctance to participate in an activity that many had previously found difficult.

In the most effective provision, numeracy skills were developed as part of all post-16 vocational training, as a matter of course and not as an option. In all the providers visited for this survey where learners' needs were well understood and met, numeracy was an integral part of vocational provision and learners made good progress in developing the technical numeracy skills required for their vocational qualification and related employment.

Successful providers of discrete provision worked effectively with other providers and community groups to set up new courses in numeracy for specific target groups or to

extend provision to deprived areas. However, the weaker provision focused on teaching disparate topics, following external test specifications too narrowly, and failed to ensure that the provision met learners' personal goals.

Common features of effective numeracy teaching and learning included:

- developing learners' ability to tackle numeracy-related problems by setting them in purposeful contexts
- showing learners how to build on their previous knowledge and skills to develop their understanding
- providing opportunities for learners to work out the most appropriate approaches to problems individually and with other learners
- encouraging learners to tackle their misconceptions by analysing incorrect answers
- developing learners' conceptual understanding of numeracy through activities which helped them reach the stage where they could explain why a specific method worked
- enabling learners to apply mathematical techniques in their training, at work or in their personal lives.

Learners from these successful sessions said that they could see how numeracy related to their careers or everyday lives and were motivated to put in the effort needed to become more adept at tasks they had previously preferred to avoid.

In contrast, the weaker sessions lacked variety, learning was segmented into the acquisition of disparate mathematical skills, and often involved working through repetitive exercises. Learners were typically preoccupied with memorising seemingly arbitrary rules and replicating steps in a method, often without understanding them. They were not encouraged sufficiently to make connections between what they had learnt and to draw on their existing knowledge and understanding in solving realistic problems.

In the 46 providers where relevant information was examined, 78% of the 506 specialist numeracy tutors working within these providers had a generic teaching qualification. However, only 28% had the required qualifications in teaching numeracy at level 5 or equivalent. Only 15 of these providers had more than half of their specialist numeracy tutors with qualifications in teaching numeracy at this level.

In nearly all the providers visited, quality improvement arrangements, such as the observation of teaching and learning, did not give tutors sufficiently detailed feedback on their practice. Tutors did not have enough opportunities to increase their technical skills in teaching numeracy through sharing good practice and frequent access to subject-specific continuing professional development. The potential for the use of information technology was not exploited sufficiently in advancing learners' practical application of numeracy skills or as a resource to develop the teaching skills of vocational and specialist tutors.

One of the most significant challenges in relation to numeracy is to identify and engage the young people and adults who have low levels of numeracy skills but either may not be aware of the numeracy provision available to them, or may be reluctant to participate. The importance of literacy as a precondition of learning and progress at work is widely understood. The challenge is in giving numeracy the same status, so that learners, providers, tutors and employers all see numeracy as essential to achieving vocational qualifications and career and personal goals.

Key findings

- Providers were most effective in meeting learners' development needs in numeracy where they had a clear management strategy to ensure that numeracy was a compulsory component in all vocational courses up to and including level 2.
- Across all the settings visited, initial assessments demonstrated a high level of need for numeracy provision up to and including level 2. In some of the colleges and learning providers, more than 70% of learners started below this level.
- In the most successful provision, learners developed their understanding of underlying mathematical concepts through practical and vocational applications.
- The teaching in numeracy was more successful where providers had developed the role of one or more well-qualified and experienced numeracy specialists to support vocational trainers in planning and delivering learning sessions.
- The majority of the provision judged to be no better than satisfactory for classroom practice and resources focused primarily on disparate topics that were required for external tests. The individual learning plans reviewed at these providers failed to identify clear learning goals that related to the learners' personal aims and career or employment goals.
- Initial assessment of learners' numeracy skills was no better than satisfactory in 19 of the 35 providers of full-time vocational provision visited. The weaker providers either did not assess all their learners effectively, or tutors did not use the results of the assessments in sufficient detail to plan learning.
- Where numeracy remained an option on vocational programmes, literacy and information and communication technology were the more popular key or functional skill options, and managers did not monitor adequately the take-up of numeracy by those who needed this particular skill.
- The providers of the discrete provision visited worked well with local partners to set up new numeracy provision in areas of high deprivation. In particular, family learning and family literacy provided a successful route into numeracy provision.
- Despite a high level of need, the take-up of discrete numeracy provision was low in five of the six prisons visited. In addition, the assessment of numeracy skills for offenders on probation was not sufficiently thorough in each of the three Probation Trusts visited and the subsequent take-up of courses was also low.
- Thirty-one of the 46 providers where records were sampled had fewer than half of their tutors with the required qualifications at level 5 in teaching numeracy.

- Tutors did not have sufficient opportunities to develop their specialist expertise in the teaching of numeracy or their own knowledge in mathematics above level 2. Providers' quality improvement arrangements did not give tutors sufficiently detailed feedback on the technical aspects of their teaching of numeracy.
- Judgements in providers' self-assessment reports did not differentiate clearly between their literacy and numeracy provision. The weaker reports were not sufficiently evaluative of teaching and learning and they did not identify actions specifically to address underperformance in numeracy.

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