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Maths & Fngssin
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TRIBAL

Making sense of maths and English in FE



Paul Offord @PaulOfford

Numeracy and literacy levels are apparently at crisis point among young adults and the FE sector has been ordered by the government to pick up the pieces.

A report by the Organisation for Economic Co-operation and Development (OECD) showed England and Ireland to be lagging behind much of the rest of the world for these key skills.

Now all post-16-year-olds who fail expressed concern about these

to secure a C grade at GCSE will have to carry on studying the subjects, so colleges must figure out how they are going to teach all the extra learners.

The question of how we should reverse decades of maths and English decline has become the topic of passionate debate in the House of Commons and provoked widespread discourse among the general public and media.

The government hopes to achieve this through new maths and English GCSEs, the details of which have now been spelled out by Ofqual. But many senior figures in FE have

being enforced

upon colleges. They fear the sector is already having to shoulder too much blame for national numeracy and literacy failings and take on the brunt of responsibility for turning

things around. This is why FE Week thought the time was right to publish a 16 page supplement, providing extensive

of the most important issues the sector has had to get to grips with in generations.

We have started with reports on the new GCSEs and FE teaching enhancement programmes (p.3).

This is followed with a comparison of the merits of traditional and technology-driven teaching (p. 4 and p.5).

We then look at GCSEs and functional skills qualifications (p.6 and p.7) and have published a series of informed comment pieces from our panel of experts (p.10, p.11 and p.12).

Next, is a report on the OECD's findings on literacy and numeracy (p.13), then MPs who took part in the debate on numeracy and literacy update us with their

Don't forget, as always, you can let us know your opinion on the FE Week website, or tweet us @FEWeek.

FF. Week

coverage on one

**FE Week** is a newspaper dedicated to reporting on news, analysis, jobs and fun in the further education sector.

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# Ofqual announce detail of new GCSEs

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Paul Offord @PaulOfford

Ofqual has published full details of the new maths and English GCSEs which will be introduced from 2015

In a report unveiled on November 1, the qualifications watchdog confirmed there will be a new grading scale that uses the numbers 1 to 9 to identify levels of performance, with 9 being the top level.

Maths, English language and English literature will all be assessed by exams. without coursework

There will be no tiering of papers for English language and literature, but higher and lower level papers will be retained for maths.

Most exams will only be sat in the summer, apart from limited cases with English language and maths where students who were 16 on the preceding August 31 will be able to take them in November.

Ofqual's chief regulator Glenys Stacey explained why the grading system had been changed.

She said: "For many people, the move away from traditional grades, A, B, C and so on, may be hard to understand. But it is important. The new qualifications will be significantly different and we need to signal this clearly.

In a public consultation on the new GCSEs, the Association of Colleges (AoC)

raised concern about students who failed to achieve a C grade at English and maths, simply being forced to resit the same exam

It said there should be pre-GCSE stepping-stone qualifications and a better link between functional skills and GCSEs — which it claimed would make it easier for post-16 students to gradually improve up to GCSE level.

The AoC also disapproved of plans to scrap coursework and base the assessment entirely on end-of-course exams.

It stated: "We are concerned a return to fully linear GCSEs with 100 per cent end assessment by external examination will not suit some young people.

"Research shows that end assessment favours boys, while continuous assessment and coursework favours girls."

The AoC also raised concern that students with special needs could struggle to cope with high pressure exam situations.

The government also confirmed on October 28 that the new maths and English GCSEs would be incorporated into apprenticeships instead of functional skills

Roger Francis, from vocational training firm Creative Learning Partners Ltd. raised concern this would rule out many less academic young people.

He said: "If the new GCSEs become the only standard for future apprentices, then there is a serious danger that thousands of

will be £1m.

young people who simply cannot cope with the rigours of an academic course will be disadvantaged and unable to complete an apprenticeship.

The Association of Employment and Learning Providers also commented in its submission to the GCSE consultation

It stated: "They [the reformed maths and English GCSEs] must be flexible enough to meet the needs of learners in work-based settings, where high quality programmes such as apprenticeships and traineeships are not linked to the academic year."



### Key changes to maths and English

A new grading scale that uses the numbers 1 - 9 to identify levels of performance, with 9 being the top level. Students will get a U where performance is below the minimum required to pass the GCSE.

Tiering to be used only for subjects where untiered papers will not allow students at the lower end of the ability range to demonstrate their knowledge and skills. or will not stretch the most able. Where it is used, the tiering model used will be decided on a subject-by-subject basis.

A fully linear structure, with all assessment at the end of the course and content

Exams as the default method of assessment, except where they cannot provide valid assessment of the skills required. We will announce decisions on non-exam assessment on a subject-by-subject basis.

Exams only in the summer, apart from English language and maths, where there will also be exams in November for students who were at least 16 on the preceding 31st August.

# Subsidised courses will help FE cope with change

New courses are set to be launched to prepare FE lecturers for a massive expansion in students who will need to be taught English and maths GCSE.

The Education and Training Foundation (ETF) has announced it will subsidise a new GCSE maths enhancement programme, which will limit the cost of the course to be launched in November to £100 per person. Paula Jones, chair of the Association of Centres for

Excellence in Teacher Training (ACETT), confirmed a similar course to ensure FE lecturers are equipped to teach English GCSE is also being developed. This could be launched as early as spring next year.

Speaking about the maths course subsidy. Peter Davies (pictured right), interim ETF chief executive, said: "I am delighted we are able to add value to this programme, increasing the opportunities for tutors. teachers and trainers from across the sector to develop their subject knowledge in maths.'

The courses are needed because the government has announced pupils aged 16 will no longer be able to drop maths or English, unless they have achieved at least a grade C in their GCSEs.

This will mean thousands more teenagers having to be taught maths and English in FE

Ms Jones said: "We know there is going to be quite a lot of demand for the GCSE maths enhancement programme. We are looking to try to help up to 2,000 colleagues from the FE sector."

"This will be a six-day programme that will be delivered over the course of four months, either in-house at the colleges where lecturers are based, or at other

John Westwell, from the National Centre for Excellence in the Teaching of Mathematics which is developing the course, said: "It is designed to recognise there are a lot of people in FE who are already teaching numeracy and functional skills, but are not GCSE

"The emphasis is on expanding on their skills — we are not starting from a blank page.

"The course will focus on areas such as algebra, trigonometry, geometry and statistics."

He added the course will specifically look at the most effective ways of preparing learners for resits. The ETF's overall subsidy for the maths programme

Ms Jones said: "It is brilliant that ETF will be able to provide financial support, as without it I would say the

course would cost around £700 per person instead of £100, which is obviously far more reasonable. Full details of the English upskilling course will not be revealed until later



However, a spokesperson for ETF, said: "The Department for Education (DfE) does have an English continued professional development course in development, but delivery models and arrangements are vet to

"The foundation will work to make the programme as accessible and affordable for providers as possible. What this may look like will be determined as the programme develops."

A DfE spokesperson said: "We are working with the ETF and ACETT to develop an English enhancement programme to upskill teachers in the post-16 sector."



## In support of traditional classroom teaching:

Rebecca Cooney @RebeccaKCooney

Ms Southwood thinks it is important to maintain faceto-face interaction between teachers and learners in a traditional classroom setting.

"I think learning is a social activity," says Ms Southwood. "And while I know you can be social on networks and talk to each other on Facebook and virtual learning environments and things like that, there are people — and I think I'm one of them — who like to actually be in the room with people when they're having a conversation.

unemployed, it's a really big thing

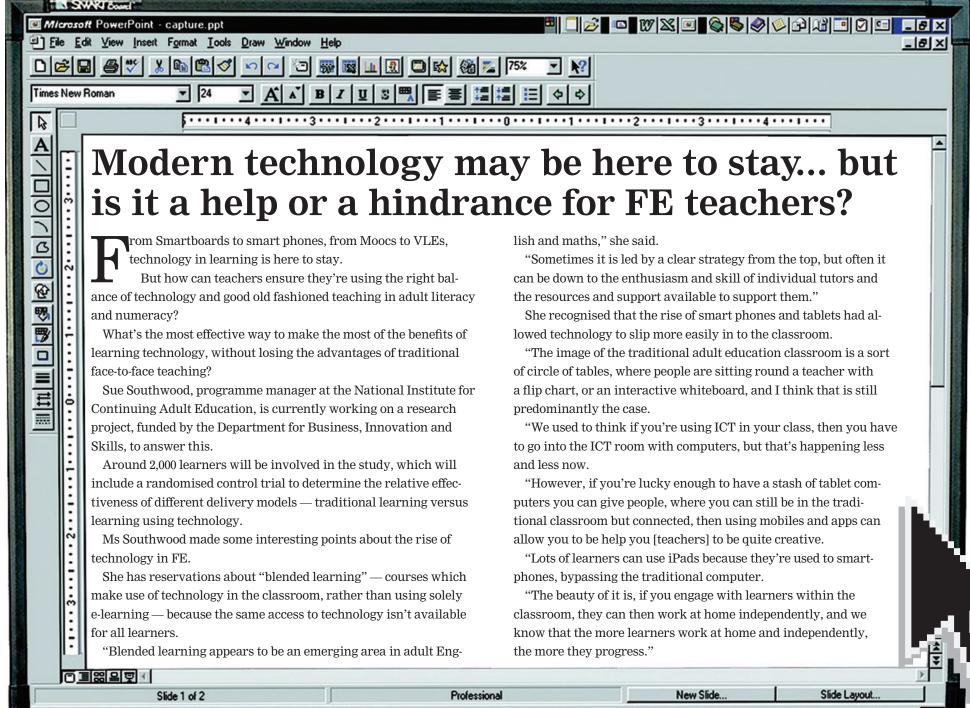
to get them out of their house to a class on time, so they have to be up, washed and dressed, and mixing with others," she adds.

"If you're suffering from depression or feeling lonely and isolated, part of going to a class is getting back into life itself — and if you have children it's nice to go out without sick on you.

"All these things are a really important part of getting your life back together and for a lot of people literacy and numeracy classes are part of that, a step in taking control of their lives.

"I'd hate to lose face to face [contact], I couldn't bear to think of "Also, I think for people who are literacy and numeracy only being delivered online."





www.feweek.co.uk

# App will solve maths problems and help you understand subject better

earning technology can have uses outside of formal course or classroom settings, as Niace hopes to demonstrate with its new mobile phone app.

The app, which is designed to help solve everyday maths problems and combat low levels of adult numeracy will be launched at the Niace conference

Maths Everywhere is being developed by Niace as part of the Maths4Us initiative, in response to findings that almost half of adults in England (49 per cent) have entry level maths (the expected level of maths for an 11-year-old).

The aim of the app, according to Susan Easton, Niace lead officer for digital learning, is to allow adults "to learn in ways that are relevant to their everyday lives".

"It's not a question of just repeating what they heard in school — it didn't work the first time, it's not going to work the second time," she said.

The app was designed by a team from Bolton College, which beat two other teams to win Niace's maths app challenge through a public vote.

The app, which will be available through the iPhone app store, will provide tools to solve maths problems in everyday life, such as measurement conversions, betting odds, price comparisons and calculating discounts.

The automatic calculators on the app will solve the problem for the user, and then encourage them to find out how to do it for themselves.

"The tools do the task for you, because when you're in an environment



Maths Everywhere beta interface

where you need the answer, you want the maths done for you, you don't want to learn how to do it. But we're hoping that once you've done this several times, you'll want to learn how to do this for yourself," said Paul McKean, information and learning technology development manager at Bolton College.

Ultimately, he added, he hoped the app, which also includes challenges to practice newly developed maths skills, would give users the confidence to consider returning to education.



## In support of technology in teaching

There are many benefits that increased use of technology can bring to FE learning, as Ms Southwood pointed out.

"There are people for whom online learning is the perfect way for adult skills education to be delivered," says Ms Southwood.

"Some people work all day and in the evening they want to go on Skills

Wise and Bitesize [BBC learning and revision websites] and learn where to put the apostrophe and that's all they want.

"They can slip it into their everyday lives, without too much of a fuss.

"Online learning also gives you the chance to go over and over something until you get it," she adds.

"I think it's very important for maths

learners in that way. You can go at your own pace and you can do something ten times.

"Also, let's not forget people in adult literacy and numeracy classes have often had negative experiences at school and it [traditional classroom teaching] can bring back those uncomfortable memories of not getting it 'quick enough' or being the only one not following.

"However brilliant the teacher is at creating a climate conducive to learning, adult literacy and numeracy learners tend to be very sensitive about their skill levels.

"With online learning you can hide away on your computer.

"You can go at your own pace without feeling any of that pressure."



#### TRIBAL

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# GCSE or functional skills... which one meets the 'gold standard'?



Paul Offord

oncern has been raised that Ufunctional skills qualifications are already being downgraded compared to "gold standard" GCSEs

Roger Francis, a director with vocational training company Creative Learning Partners Ltd, thinks functional skills offer post-16 students who fail to achieve A-C GCSE at maths and English a more practical way of attaining numeracy for Education (DfE) if functional skills

But they are set to be dropped as the accompanying qualification for apprenticeships in favour of new GCSEs

Mr Francis disagrees with this and fears functional skills are already being downgraded by the government.

He told FE Week: "The employers with whom we work see the qualification as being far more relevant to the workplace and therefore of more value than the academically focused GCSEs.

"I am therefore concerned by what already appears to be a significant shift in the government's position on functional skills.

"Until a few months ago. a level two functional skills qualification was deemed to be the equivalent of an A-C grade GCSE.

"However, recently, GCSEs are being championed as the 'gold standard', with functional skills seen as some sort of stepping stone along the way. This seems to me to be fundamentally wrong.

He claimed there was "almost universal agreement" among employers and training providers that academic-based GCSEs were unsuitable for workplace

provide a robust alternative, which is far

"I believe it is essential they are seen as that and not as some second-class qualification.

"We want learners to be proud of their feel they are GCSE failures.'

and literacy skills required by employers. were being downgraded, a spokesperson appeared to suggest they would in future be viewed as a stepping stone to the GCSE

> people as possible to progress to achieve English and maths GCSE at A\*-C before reaching age 19. Functional skills in English and maths provide the way they

Mr Francis added: "Functional skills more relevant to the workplace.

achievement in functional skills and not

When FE Week asked the Department

She said: "We want as many young can work towards that standard."



n view of the debate over the relative merits of functional skills qualifications and GCSEs, FE Week sent reporters Paul Offord and Rebecca Cooney back to the classroom to try out

They were watched over by Roger Francis, from Creative Learning Partners, who advised on what functional skills and GCSE papers to sit in order to provide a fair comparison.

Rebecca, aged 24, is a spring chicken who sat her GCSEs just eight short years ago, whereas oldtimer Paul, aged 36, who completed his GCSEs way back in 1993.

Their views on the different exams being sat by the current generation of teenagers are printed below.



Tthought I had left exams long behind me... at least 15 years ago.

But no, my editor wanted me to sit English functional skills and GCSE papers, so sure enough the same old panicky dreams returned — in the nights leading up to the big day, I would find myself sat upright in bed convinced I was about to ruin my life because I hadn't done enough revision.

I sat an OCR GCSE English language foundation level paper, which required me to read a heartbreaking essay on how orangutans are in danger of becoming extinct.

This was followed by a World Wildlife Fund leaflet calling on donors to join a campaign to help save the apes.

The shorter questions tested how well I had understood the literature, for example asking me to write down two descriptions from the essay which made the orangutans seem almost human

I was then challenged to write down what I had learned about orangutans and the threats they faced.

Section B challenged me to write an extended magazine article reflecting on how to explain why I had reached my I would make the world a better place if I

I found both sections challenging and was impressed with how they focused on testing my understanding of language, then challenged me to put it to use in a potential

I then sat an English reading level two functional skills exam, which required

me to read a statement released by the UK Driving Safety Board on driving safely in the snow, along with a series of comments about school closures during freezing periods taken from Suffolk Council's website forum

MULLIPHIE

This was followed by two newspaper editorials on how Britain coped with snow.

I found a question challenging me to choose one-word sub-headings to summarise the content of each paragraph in the driving safety board's statement pretty tough — even though it's the sort of editing process we have to follow as journalists.

I was then asked a series of questions testing how well I had understood the forum comments, including "what techniques does Michelle M use to make her point?" and another asking how the council benefit from the forum discussion, which required more analysis.

I was then asked to choose which of the four documents provided the best understanding of how had weather had affected the UK, which required me

Overall, the functional skills exam probably required more technical analysis of language, but I needed to be able to express myself through longer articles for the GCSE.

I was impressed that both forced me to analyse other people's writing and express myself through the written word.









s I sat down at the table with a neat Astack of exam papers and geometry kit laid out before me, I found myself panicking. I hated maths at school (despite the best efforts of my great teacher, Mrs Uglow) and have a vivid memory of standing on the steps of the exam hall after my last GCSE maths exam, dizzy with relief that I would never have to study it again.

So it all felt a little bit surreal and rather daunting when eight years later, I suddenly found myself confronted with not one, but two maths exam papers... which I hadn't

The clock started and I was sitting an OCR foundation maths GCSE exam and an equivalent level one City and Guilds functional skills paper.

I started with the functional skills paper, which on balance, was probably the trickier of the two, because it's based more closely on "real life" scenarios.

This meant I often had to pause to

work out which mathematical technique was being asked for. For example. the first

question involved choosing a

It required addition, subtraction, percentages, division, creating a table and being able to tell the time. However, this wasn't explicitly explained, you had to work out what mathematical methods were required from the wording of the imaginary

I have to admit, this threw me a little. I misread the question, so had to start again. The GCSE paper, on the other hand, simply asked me to "work out" 7 x 6, half of 18 or 84 - 35. Even where the questions were posed within scenarios, they were much more direct about the maths they were

After the GCSE test, I felt I had simply completed a series of technical exercises. I was impressed that I had answered questions that tried to replicate real life and used skills that would be useful in real life throughout the functional skills exam

Despite the waves of outright panic (particularly when I had to start the functional skills takeaway question) the really weren't as bad

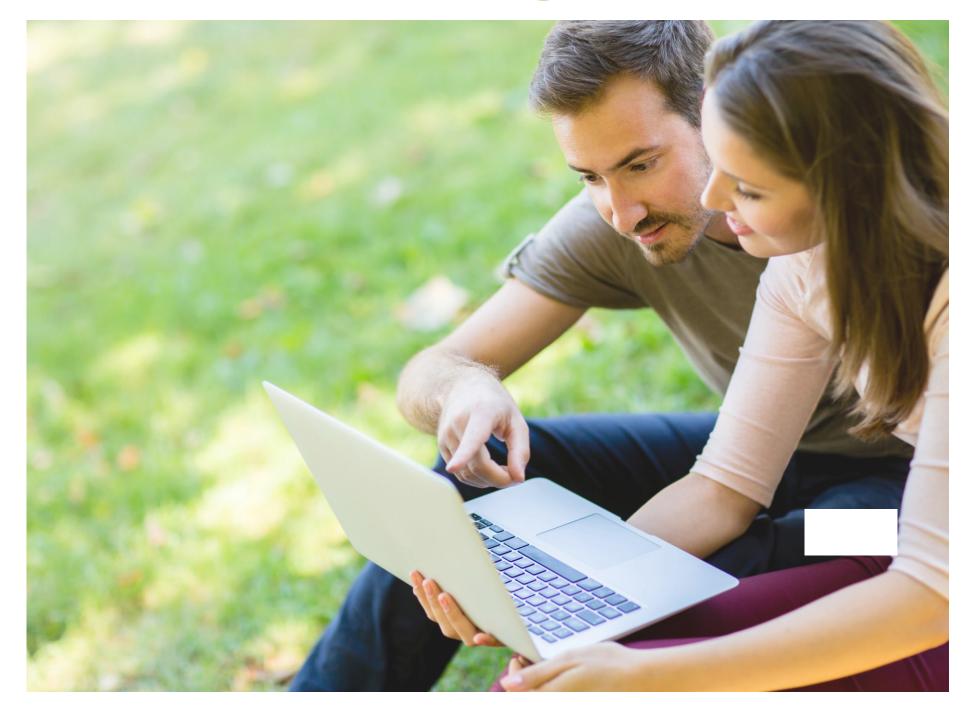
> as I'd imagined they vould be. That said, I'd be perfectly nappy if have to do it

again for another eight years.

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working as one





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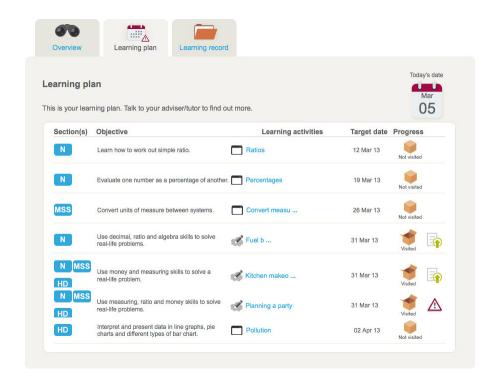
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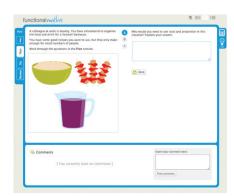
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FE Week experts

# Functional skills can deliver what employers need

Parity should be maintained between how GCSEs and functional skills are valued by the government, says Stella

With the increasing focus on English and maths, the Association of Employment and Learning Providers' (AELP) members are concerned the positioning of functional skills for English and maths in relation to GCSE should be very clear and transparent.

In some areas, functional skills are now being described as the "interim qualification" or "stepping stone" towards the achievement of GCSEs, which the government sees as the "gold standard".

In our view there should continue to be parity between the two types of qualifications, with a level two functional skill recognised as equivalent level to GCSE grade A\* - C. Functional skills are now well accepted by employers as important components of apprenticeship frameworks and as valuable standalone qualifications.

Employers are beginning to recognise that as well as developing vital skills in English and maths, functional skills can help young people apply skills to different contexts, solve problems, use their initiative and work independently.

At the moment, many learners who have been demotivated by not achieving maths and English GCSEs at grade C or above at school, become more engaged through undertaking functional skills in these subjects.

This is because these qualifications relate the skills and knowledge to their working and personal life.

GCSEs are, quite rightly, designed for schools, to be delivered over a two year

This sometimes makes them unsuitable for use on shorter programmes, rollon-roll-off provision and for use with disengaged learners.

By comparison, functional skills are flexible qualifications with multiple assessment opportunities, which means they can be delivered in a way that meets the needs of individual learners and their

There are also serious concerns within the sector, particularly among work based learning providers, about the capacity to deliver GCSEs

We need to build the capacity within all providers to deliver high quality English and maths.

The new support programme for teachers of maths that is being delivered through the National Centre for Excellence in Teaching of Mathematics (NCETM) and bursaries to support those



intending to teach English and maths in FE are to be welcomed

But it is questionable whether these initiatives alone will be able to make up the massive shortfall in maths and English specialists required to deliver the English and maths components of apprenticeships, study programmes and traineeships.

There also needs to be significant investment in improving the teaching and learning of these essential subjects pre-16, in both primary and secondary schools.

In its 2013 policy manifesto, AELP argues an element of outcome related funding should be introduced into

This will encourage schools to focus on ensuring all young people leave the secondary phase of their compulsory education with a solid foundation in English and maths that will underpin progression to further academic or vocational study.

In addition to investment, there also needs to be stability in literacy and numeracy, or as it is now referred to. the English and maths qualifications landscape which has undergone significant transformation in recent

Functional skills, which are in their infancy compared to GCSEs, must be allowed to become embedded and their true value in delivering the skills that employers need recognised.

The credibility of functional skills with employers is growing and we need to ensure we continue to embed high quality maths and English functionality in the wider programmes such as traineeships and apprenticeships.

Stella Turner, head of qualifications and delivery at the Association of Employment and Learning Providers

# Government must not 'tie hands' of college staff who want to help struggling 49pc

The FE sector wants to play a key role in improving literacy and numeracy levels, but it could be undermined by restrictive government policies. according to Joy Mercer

No one doubts how important English and maths are to leading a productive life as an employer, employee, parent or

Governments have launched countless initiatives to ensure everybody leaves education with the necessary English and

However, in the 14 years since the Moser Report, which found that 20 per cent of adults lacked functional literacy and numeracy skills, 49 per cent of young people are still leaving school at 16 without 5 A\*-C GCSEs, including English and

#### The government must listen to the advice of college staff and unleash the enthusiasm

A survey published this year by the Department for Business, Innovation and Skills showed that 24 per cent of adults (8.1 million people) lack functional numeracy skills and 15 per cent (5.1 million people) lack functional literacy skills.

The recent Organisation for Economic Co-operation and Development (OECD) report concluded England has below average literacy and numeracy levels.

This puts us in the Championship not the Premier League — which is better than the USA. Spain and France, but well below the Scandinavian countries, Japan and South

The fact that colleges pick up the baton after nearly 11 years of school-based education is demonstrated in the numbers

In 2010/11, there were around 400,000 students taking basic maths and English and a further 134,000 at level two.

The focus on English and maths will become even stronger from 2014, as English and maths become compulsory for all students aged 16 to 18.

Yet, the government has not asked schools to alert students to the changes post-16, nor has it encouraged employers to beat the drum of English and maths to prospective young employees.

Ofsted insists on portraying achievement of GCSE maths and English qualifications



by 18-year olds in colleges as dismal, when colleges have focused on functional skills achievement to give young people success rather than failure

The GCSE reform plan is designed to raise the standards and will also result in the withdrawal of the old qualification.

The reform of GCSEs maths and English must have functionality to ensure they are based on evidence of how maths and English skills are both developed as concepts and retained in practical applications.

The recent announcement of £9m of bursaries to support the best graduates to teach English, maths and students with disabilities or learning difficulties and enter the post-16 teaching workforce is

However it is only available for preservice training.

Why can't training of new college teachers reflect the in-service model favoured by the government, such as Teach First and Schools Direct?

Colleges will make this work and they have common timetable slots so all students who need it can access maths and English provision and are organising programmes to upskill all their staff.

But they also report large classes, some reluctant students and a desperate need for more qualified and able teachers.

The government must listen to the advice of college staff and unleash the enthusiasm they have to give young people and adults a second chance.

Ministers must not tie their hands behind their backs through poorly targeted bursary schemes, punitive performance measures and expenditure on spare spaces in new academies and free schools when this resource could be channeled into improving the life chances of the 49 per

Joy Mercer, director of policy for the Association of Colleges

#### FE Week experts

# If employers are from Mars and young people are from Venus... better literacy can bring them into same orbit

ployers why they need better literacy skills to thrive in the workplace, says Sally Melvin

The Organisation for Economic Co-▲ operation and Development (OECD) report's findings are concerning and paint an unfortunate picture of the reality facing today's young people

Being fully literate is surely the right of every young person, to enable them to take a full and useful part in society throughout

As a society, we must work together to address the shortcomings of our education system and ensure all students leave school with a sufficient grasp of English.

But literacy is about more than learning to read and write.

Being able to communicate effectively speak articulately in front of a variety of audiences, work well alongside others and interpret information are all important skills that young people should be learning.

These are skills which make one literate in the work place.

With almost one million 16-24-yearolds currently unemployed. I believe that equipping students with a full range

of literacy skills that are linked to their employability must be an integral part of their education.

According to some businesses, employers are from Mars and young people are from

How do we bring them into the same

Research shows there is a direct link

#### This would give them better understanding of how important literacy is for their future

between the social aspects of a child's life and their confidence and level of aspiration.

How do we increase young peoples' confidence and raise their aspirations for their future?

Teaching literacy skills is very important, but in isolation this is not

To achieve a better understanding on both sides, we need to bring these two groups together.

Young people need to spend time with adults from the world of work, in order to put the literacy skills they are learning into a real life context

This would give them better understanding of how important literacy is for their future.

The National Literacy Trust runs a programme called Words for Work which seeks to do just that

Its aim is to improve young people's literacy skills and increase their understanding of the world of work.

the involvement of volunteers from the local business community. The volunteers work in partnership with

The key to the success of the project is

students, providing advice and acting as role models during a series of shared tasks. Evaluation of the programme shows

really positive effect on the young people involved. According to the teachers, over 90 per

this kind of intervention can have a

The students' understanding of the use of

cent of the students improved their literacy

literacy skills in the workplace doubled and 80 per cent of young people felt they now understood the skills they need to get the job they want.

Everyone agrees schools and FE colleges should teach their students the literacy skills they will need to function fully as

I believe alongside this, they must provide opportunities for students to experience and prepare for the workplace

Sally Melvin, senior programme manager at the National Literacy Trust

#### Learners are going to need techno-maths skills to cope in the modern workplace

Steve McCormack concedes teachers haven't always succeeded in demonstrating how maths skills will be relevant to students after they leave education. Yet numeracy skills are needed more than ever when dealing with fast developing technology at work.

o on, admit it! You've taken a peek at Channel 4's Educating Yorkshire on Thursday nights. And whatever you think about the kids, the teachers, the school, or the girls' hairdos, you can't deny it's engaging, thought-provoking television.

For me, one particular thought crystallised after the recent episode in which the saintly maths teacher Mr Steer sweated blood and tears to get his — er, I think the word is challenging — year 11s through their GCSE with a Grade C.

The thought in question was prompted by the girl who, in tones every maths teacher in the land has heard a million times, said: "I don't need maths, sir, cos I'm going to do hairdressing at college." We all know that 16-year-olds who waltz

off to college under the impression that they have left numbers behind will soon experience a rude awakening, when their hairdressing tutor starts talking about angles of cut, or precision-mixing amounts required for tints and dves

The same scenario is played out, of course, on college building and catering courses, perhaps too when students studying graphic design and hospitality get their first assignments back.

You can't leave maths behind the morning after the year 11 prom.

But, if we're honest, we can see where those Yorkshire year 11 girls were coming

We should admit we haven't been smart enough in shaping maths lessons, and the qualifications they lead to, so the relevance to the world of work is obvious.

### They think about the software underneath the bonnet and try to understand what it shows and its limitations

Part of the problem is people argue it's a rare workplace where the boss greets you in the morning with a request to solve a couple of quadratic equations.

Our task, as advocates for mathseducation, is to demonstrate the ubiquitous demand for the application of the generic, transferable skills learned in maths lessons

To be really convincing, we have to go further than point out that bricklayers and chefs need to be good at measuring and most people in administrative roles need to be able work out percentages

This is not a straightforward task. because in our 21st century industrial landscape, the application of mathematical reasoning is usually far from explicit.

However, a book published a few years ago — called Improving Mathematics at Work: The need for techno-mathematical literacies — by academics at the Institute of Education in London addressed this challenge. Drawing on extensive workplace-based research, the team identified a crucial attribute — which they called techno-mathematical literacy — the best and most effective employees exhibit.

This attribute manifests itself, for example, in the ability to interpret graphs and charts accurately, identify the key variables in any system, and see how they relate to each other.

People with techno-mathematical literacy don't slavishly gaze at their lap-top screens and report that "computer says



They think about the software underneath the bonnet and try to understand what it shows and its limitations. All of these skills can best be nurtured among students with a solid maths education, who have developed mental disciplines such as precision. estimation, experimentation, and the ability to present logical arguments, with one step flowing from another.

Maths is the only subject that pulls all these skills together, and, for the sake of future generations, we'll continue to bang on about it.

Steve McCormack, communications manager for the National Centre for Excellence in the Training of Mathematics

#### FE Week expert

# FE needs better support to help post-16s pass maths and English

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The government, schools, trade unions, parents and carers all need to work together in a new drive to improve numeracy and literacy skills. says Barry Brooks

Tt is a pity that, given all the words that have been written about English and maths skills since the publication of the OECD Report on Adult Skills, the very people being spoken about or represented in the various graphs and tables will not have been able to read the text or understand the statistics

It is also somewhat ironic that at a time when the government has set out a coherent, holistic set of policies to address these recognised weaknesses, these ambitions have been overshadowed by the report's findings.

For me, as I am sure for many of you, the recent debate in the House of Commons on adult literacy and numeracy was one of those déjà vu moments we so often experience with education and skills

This time I relived almost identical sessions triggered in 1999 by "A Fresh Start", Lord Moser's Report on improving adult literacy and numeracy.

The main difference this time was that the debate was happening against a backdrop of cross-party consensus.

We have all known for some time that there is a continuous stream of young people leaving the compulsory school sector at age 16 without capability and competence in English and maths.

The percentage has remained at or around 40 per cent for over a decade.

We are also aware the vast majority of these young people have not sought to continue their GCSE studies when they enter the education and skills sector and have avoided resits wherever possible. We also know from the National Institute of Continuing Adult Education's (Niace) reviews on adult literacy and numeracy that much of the progress has slowed down, not least because funding available to raise the quality and qualifications of teachers for these subjects has all but disappeared.

The evidence was reinforced by the 2011 Skills for Life Survey, which confirmed that while progress had been made at levels one and two in literacy, numeracy progress continued to lag behind and those with the lowest levels of skills showed little or no improvement.

For me, though, the most telling evidence will emerge when the report on the Distanced Travelled or Skills Gain Pilot is published later this year.

The pilot was designed to explore whether a shift away from focusing and funding performance, as measured by qualification success, could be replaced by a more scientific approach to measuring.

recording and reporting on progress hence skills gained and progress made.

What the evaluators found was how far many providers had moved away from the teaching and learning infrastructure developed and funded by the Skills for

Centres participating in the pilot had developed their own unique approach to improving English and maths and as a consequence there was no consistent, coherent or universal approach to initial assessment, diagnostic assessment or individual learning plans.

In reality, the only remaining legacy of the strategy appeared to be a focus, wherever possible, on securing the qualifications

The results in the OECD report appear to be most disappointing for the 16 to 24 age group and I fear the FE sector is going to take the brunt of the growing

At least in the House of Commons debate. Matthew Hancock had the courage and insight to address this directly, by suggesting schools have an important role in stemming the flow of young people leaving school without GCSE A\* to C in

### The sector supports the need to improve English and maths and wants to make it meaningful and motivational for our young people

An enormous stock of young people has already passed through the school system and once again the sector is expected to address the disappointment and shortcomings of those who do not possess A\* to C in English and maths.

Many of this year's intake, unlike their predecessors, will also arrive in the autumn to find a GCSE re-take is a mandatory part of their study programme.

Providers and teachers in the sector will do everything they can to encourage young people to study these subjects, not because of a political imperative or a funding mechanism, but because these skills are essential.

But they need support and employers and trade unions must take more responsibility for ensuring our young people have access to information that helps them better understand these skills are more than "nice-to-haves" — they are "must-haves".



a role in ensuring they encourage and enable young people to have a realistic understanding of the importance of learning, but without the learners' belief or said to them, nothing can or will change.

The sector supports the need to improve English and maths and wants to make it meaningful and motivational for our

But there is there is still enormous disquiet about the government's solution being the GCSE, especially a GCSE that we are told is about to become even more "demanding, rigorous and stretching".

Within both DfE and BIS, there is recognition that not everyone can achieve a GCSE and that is why functional skills have been created and "stepping stone" qualifications have been approved.

There is also a commitment to developing programmes where English and maths are contextualised, as this makes the learning meaningful and relevant to young people.

I understand within DfE there is work planned to see how best to align the GCSE requirements with learner expectation and motivation.

These are challenging times for the sector, as we await the outcomes of the Review of Adult Vocational Qualifications, the Consultation on Apprenticeship Funding and the Implementation Plan for the Richard

One thing is certain — English and maths will remain essential whatever policies are in place and the sector will. as always, rise to these challenges and remain relentless in its commitment to improving standards and increasing opportunities.

> Barry Brooks, Strategic Adviser to the Tribal Board

# OECD spells out key skills failings

#### Paul Offord @PaulOfford

**D**oor numeracy and literacy levels among young people in England and Northern Ireland were exposed by the Organisation for **Economic Co-operation** and Development (OECD).

It warned in a report published on October 4 that England and Northern Ireland have a significantly higher proportion of adults scoring at or below level one — the lowest possible level — in numeracy, compared to the average for the 23 countries surveyed.

The report stated: "In fact, 24.1 per cent of adults, around 8.5 million people, scored at that level, compared to the average (among participating countries from across the world) of 19 per

cent.'

At level one in numeracy, adults can only perform basic mathematical

England is also the only country surveyed where the oldest age group (55 to 65) has higher proficiency in literacy and numeracy than the youngest group (16 to 24).

This was 21 per cent lower than in

OECD Skills Outlook 2013

FIRST RESULTS FROM THE SURVEY

OF ADULT SKILLS

"Individuals with lower proficiency in literacy are more likely than those with better literacy skills to report poor health and believe that they have little impact on political processes"

OECD

Some 16.4 cent of adults, or around 5.8 million people, in England and Northern Ireland scored at level one or below in literacy, which is similar to the average of 15.5 per cent of adults among all participating countries.

At level one in literacy, adults can only read brief information on familiar topics.

The report warned: "Individuals with lower proficiency in literacy are more likely than those with better literacy skills to report poor health and believe that they have little impact on political

With regards to solving technologyorientated problems—for example using computers — just 42.4 per cent of 16 to 24-year-olds in England and Northern Ireland were proficient at level two or three, compared to the average among 23 participating countries of 50.7 per cent.

Korea, the best performing country in this

The report stated: "The implication for England and Northern Ireland is that the stock of skills available to them is bound to decline over the next decades unless significant action is taken to improve skills proficiency among young people."

It warned about high levels of social and pay inequality among skilled and unskilled workers.

"The median of hourly wage of workers who score at level four or five in literacy is 94 per cent higher than that of workers who score at below level one," stated the

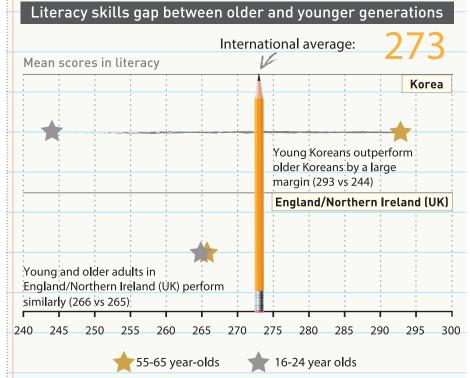
"In England and Northern Ireland 83.4 per cent of highly skilled adults are employed, compared to an average of 79.1 per cent of adults in all participating



impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to

Source: Survey of Adult Skills (PIAAC) (2012), Table A2.1

Source: Survey of Adult Skills (PIAAC) (2012), Table A3.1(L)



# MPs have their say on great maths and English debate

the bottom of the OECD table "

MPs spoke passionately about how poor rates of numeracy and literacy should be tackled during of a House of Common debate. This was prompted by the findings from an Organisation for Economic Co-operation and Development (OECD) report, which warned of numeracy and literacy skills in England and Northern Ireland falling below most other countries surveyed across the world.

Now, many of the MPs who spoke in the Commons on October 10 have spoken to FE Week about the considerable media and public interest provoked by the debate and the points they made in their speeches.



Justin Tomlinson, Conservative MP for North Swindon, said: "It was absolutely essential that we discussed what are frankly disgracefully bad numeracy and literacy rates.

"As someone who went to a school that was right at the bottom of the league tables, I saw first-hand how too many young people are robbed of opportunity through poor education.

"Pupil premium money can be used to help bring down class sizes, so children have more one-to-one support, as I have seen in one of my impressive local schools.

"Families also have a huge role to play in helping their children."



Kelvin Hopkins, Labour MP for Luton North, said:

I think there have been problems with how we teach maths for a long time, which is what I spoke about in my speech. "The emphasis has been on post-16 education, but the problem is at primary schools. There has been a school of thought that rote learning of times tables was fundamentally bad, but we have a generation now that can't understand basic maths. If you go to the continent, they are much more rigorous with this and have the building blocks to understand arithmetic. It shows as we are near



Workers Education Association (WEA). Libraries too have so much more of a part they can play.

If society, particularly the younger generation, has a problem available after the final class bell."





#### Julie Elliott, Labour MP for Sunderland Central, said:

I dedicated my time in the debate to Unionlearn (a trade union scheme which helps educate working families), because I believe t does crucial work in supporting working people to improve their iteracy and numeracy skills.

"By training thousands of union reps, unions have helped nundreds of thousands of people to improve their skills, which ncreases their life chances, creates value for their organisation, and provides a huge boost to that person's well-being. "I believe the debate was a positive one which attracted a high level of discussion, and I was pleased to be able to raise



#### Huw Irranca-Davies, Labour MP for Ogmore, said:

awareness of this excellent scheme."

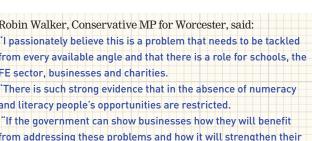
"Literacy and numeracy are core skills which materially affect the life chance of adults and children, but tackling low levels of literacy and numeracy require well-targeted and sustained

"Best practice within all parts of the UK and internationally should be applied to improving standards over time."



#### Toby Perkins, Labour MP for Chesterfield, said:

Secondly, we can't only see this as an educational issue. The OECD was very clear Britain must also address social inequalities



#### David Rutley, Conservative MP for Macclesfield, said:

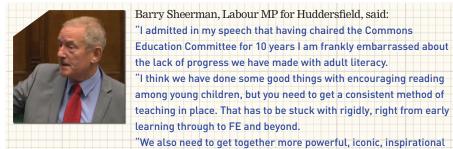
everyone is to improve their life chances and reach their full

people learn basic IT skills to help them build on their existing



'I thought the debate was a really useful way of highlighting the importance of improving adult literacy and numeracy and demonstrating the cross-party consensus that it needs to be an

"I find that a number of my younger constituents find it challenging to communicate in writing, either by email or on paper. There is no hard and fast rule, but I find lack of literacy is one of the reasons people come to me for help with DLA, housing or tax matters. They often have just not been able to fill in forms."



Brian Binley, Conservative MP for Northampton South, said: I am delighted our schooling reforms are helping to empower parents and communities, but this is only part of the process. "I went to a secondary modern and left school at 15. But I profited greatly from opportunities offered later in life by, for instance, the

with literacy and numeracy, we also need to find solutions that are



thought that overall this was an excellent debate, but I tried to use my speech to highlight two significant traps we must avoid falling into. Firstly, the government should genuinely learn from the OECD report, rather than using it to justify its pre-set policies. Many of its reforms are based on American practices, when the US fared worse than us in this report.

figures who's lives were totally transformed for the better through

learning to read, so they can inspire the next generation."

which lie at the heart of illiteracy and innumeracy."



## "Adult literacy and numeracy is of the utmost important if

Given the importance of the internet, it is vital that more

I am pleased that the debate in the House helped broaden the discussion on adult literacy and numeracy across the country."



#### Christopher Pincher, Conservative MP for Tamworth, said:

item high the Department for Education's agenda.



# Caroline Dinenage

Conservative MP for Gosport, Stubbington, Lee on the Solent and Hill Head

Caroline Dinenage, Conservative MP for Gosport, Stubbington, Lee on the Solent and Hill Head, requested the debate and vited to set up an áll-party parliame group (APG) on numeracy and maths. She said: "This happened as a direct result of the debate, so I'm very pleased. "There is already an APG on literacy and

"We will be able to look at this important issue in detail and make recomn

"We will try to attract the widest possible membership, from all parties and across the House of Commons and the

#### House of Lords."

"I was not disappointed with the attendattended), as it was only confirmed three

"That meant a lot of people who had previ ously shown support on the issue were gutted they couldn't make it. The quality of people who took part was really high

"I have had a lot of emails and tweets from people who watched the debate across the country and want to help come up with ideas to help tackle this serious

### Matthew Hancock pictured with FE Week Editor Nick Linford (right) Matthew Hancock Skills Minister, Conservative MP for West Suffolk 'This latest OECD survey of adult skills so that people can participate in learn-

reaffirms my determination to drive up standards of English and maths.

"These skills are vitally important for also improving well-being and health.

"That is why we fully fund adults to improve their English and maths where they missed out earlier in life, whether or

"This includes a wide range of provision strengthen them."

ing in the way that suits them, including community learning, traditional college

ship programme and apprenticeships. English and maths are quite simply the best insurance against unemployment,



Nigel Evans, independent MP for Ribble Valley, said:

Robin Walker, Conservative MP for Worcester, said:

and literacy people's opportunities are restricted.

FE sector, businesses and charities.

approach.

I thought the debate was very timely, coming as it did on the heels of the OECD report.

work force, then I believe we will see them taking a more proactive

'There is no excuse for it and to turn the tanker around action is needed now. We might not see any real improvements for a decade, but that is all the more reason to start.

"As far as dyslexia is concerned (in relation to wider problems with reading and writing), I have had constituents who have found it difficult to get proper recognition of the condition.

"This could reinforce a lack of confidence in people's abilities."





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