CEM
Centre for Evaluation & Monitoring

Durham University

CONNECT

ISSUE 07 • SUMMER 2016

IMPROVING OUTCOMES

for every child

mild inattention can go unnoticed,
read more inside on page 6

Also in this issue

INTRODUCTION

WELCOME TO OUR SUMMER 2016 CEM CONNECT!

In April this year the Department for Education in England published a study which concluded that the three accredited reception baseline assessments are not sufficiently comparable to create a fair starting point from which to measure pupils' progress. Consequently, the pooled results cannot be used as a baseline for progress measures, as it would be inappropriate and unfair to schools.

CEM's reception baseline assessment, BASE, remains a highly effective assessment for use in the early years. The DfE has not challenged the quality of BASE. It is an accurate and efficient assessment to give educators a detailed reflection of what young children know and can do when they enter school. Researchers here at CEM firmly maintain the value of early benchmarking and the need for baseline assessments, regardless of any accountability policy.

BASE will continue to be available for schools for both start and end of year assessments, offering reliable insight into each child's stage of development through a series of innovative reports (p10).

Research, evidence and impact lie at the heart of what CEM does, and a very small selection of our extensive research interests are represented in this edition of CEM Connect with a focus on the research published in April this year by CEM director, Dr Christine Merrell. The study explores the academic impact of mild attention problems in young children (p6-7). We also look at a project to increase confidence and competencies in mathematics (p3), and a statistical analysis of some of the issues surrounding observation-only assessment (p8-9).

CEM has been providing schools with evidence-based assessments since 1983 and we have helped thousands of teachers better understand their pupils. CEM assessments have been used by millions of children across the world and remain one of the most powerful tools a teacher can have.

We hope you enjoy reading this Summer 2016 issue of CEM Connect – we are always keen to have feedback, so do let us know what you think by emailing: **newsletter@cem.dur.ac.uk**

SCHOOLS NORTHEAST
The future of our region is in school

3 THINGS YOU NEED TO KNOW ABOUT...

PRIMARY CURRICULUM AND ASSESSMENT IN 2016

1. **Children in Year 1 will be tested by their teacher using the Phonics Screening Check to assess their word skills.**
   If children are below their expected level, they will get additional help and will then be re-tested in Year 2. This is to ensure that they're progressing in the way they are expected to.

2. **There is no test for writing in Year 2 or Year 6 and children's writing is evaluated by teacher assessment.**

3. **Children's attainment in the Year 2 and Year 6 tests will be reported as a scaled score from 2016.**
   This is due to the national curriculum levels and sub-levels having now been abolished in response to concerns about their reliability and validity. Because schools haven't used scaled scores before, it is not possible to compare the school's performance in 2016 with previous year's results.

ICCAMS Maths

Communicating & Engaging Schools in research: The ICCAMS2 Project

Communicating research findings to influence positive changes to everyday practice is a recognised challenge across many disciplines, and the education sector is no exception.

Formative assessment and feedback in Key Stage 3 mathematics

The ICCAMS Project (Increasing Competence and Confidence in Algebra and Multiplicative Structures) was an Economic and Social Research Council-funded project which ran from 2008 to 2012 and focused on improving teaching and learning in Key Stage 3 mathematics.

Part of the project involved working collaboratively with teachers in developing an intervention based around research-informed lessons, in order to support the use of formative assessment and feedback in secondary mathematics classrooms.

An evaluation of the intervention found evidence of significant learning gains across the attainment range for students who had been part of the intervention in comparison to a matched control group.

Mathematics attainment and attitudes

These positive results have prompted ICCAMS2, a two-year cluster randomised controlled trial funded by the Education Endowment Fund (EEF) seeking to assess the impact of the ICCAMS mathematics intervention, when delivered at distance through another institution, on Year 7 and Year 8 pupils' mathematics attainment and attitudes.

CEM is working with the University of Nottingham to conduct the trial, which will then be independently evaluated by the University of Manchester.

ICCAMS2 will also focus on addressing the mathematical learning needs of low attaining students, with whom teachers may be more hesitant to implement the approach, and for whom the intervention could result in greater learning gains and contribute to reducing the attainment gap.

Intervention schools will be invited to send Key Stage 3 mathematics teachers to attend nine professional development sessions over the two years of the project.

Teachers will be provided with a handbook containing details of the intervention and lesson plans for the 40 lessons involved in the intervention. These lessons are in line with the revised National Curriculum for mathematics and are split between topics which research shows students have struggled with: Algebra and Multiplicative Reasoning.

Addressing challenges

The project also provides teachers with 20 assessment starter activities, which along with the professional development sessions, are intended to support teachers to formatively assess and address the challenges experienced by their students.

The evidence-based materials emphasise:

- Collaborative working
- Using multiple representations of, and making links between, different mathematical concepts
- Employing realistic contexts

Recruiting schools to participate in the trial

ICCAMS2 will be recruiting 110 English state secondary schools to participate in the trial.

Schools that agree to take part will be randomly allocated to either intervention or control groups for the duration of the project.

Intervention schools will do the ICCAMS mathematics intervention with all Year 7 pupils (and later, Year 8 pupils) from September 2016 to August 2018, while the control group will continue their normal activities during this time.

If you are interested in learning more, or your school wishes to express interest in participating, further details on the trial can be found online here: **http://iccams-maths.org/**

Or please email **research@cem.dur.ac.uk**

YOU SAID, WE DID

At CEM we value customer comments, feedback and suggestions for improvement, and we use this information to help us make vital adjustments to the way our not-for profit organisation runs and the services we offer.

Therefore, in response to identifying trends in customer comments and requests we have implemented a series of modifications and improvements to our MidYIS, Yellis and ALIS assessments.

Refreshed look and feel

Schools using any part of CEM's Computer Adaptive Baseline Assessment (CABT), which forms the basis of all three MidYIS, Yellis and ALIS assessments, will see modifications which will include:

- Improvements to the visual layout and graphics within questions
- Improvements to the flow of the screens
- Improvements to screens at the start and end of assessment sections
- Improvements to content, with modified culturally-sensitive questions introduced

MidYIS, Yellis and ALIS form one integrated, segmented yet cohesive assessment - one e-assessment platform and one databank of questions offering tailored reports specific for each educational phase.

Based on the same reliable and robust research with which CEM (part of Durham University) is synonymous, the updated and integrated assessment presents users with trillions of possible combinations of routes through the computer-adaptive sections of the assessment.

Easier to use

For some years now, approximately 90% of schools using MidYIS had already chosen to use the enhanced computer-adaptive assessment. The academic year 2016/17 sees CEM's withdrawal of MidYIS paper assessments, meaning all CEM assessments from primary through to post-16 are now accessed online.

If you were previously using the paper format, you will be pleased with the enhanced benefits of the computer-adaptive version including:

- Bespoke, individually tailored assessments for each student
- More enjoyable, time efficient experience
- Improved security – with access to assessments gained through the use of newly introduced secure passkey only
- Quicker feedback

A key development that schools who upload student lists will find beneficial is that the assessments can be stopped and restarted if necessary. Once the assessment is restarted, the student will be taken back to start of that section, so they do not have to take the whole assessment again.

Moreover for students whose results indicate unreliable or inconsistent scores, for example where it appears that students have skipped questions, there is now a facility which allows schools to re-administer affected sections and students are able to take a partial re-sit of the assessment.

Improved performance

The MidYIS, Yellis and ALIS assessments will now all be run from CEM's e-assessment platform, which utilizes the same technology that drives the CEM primary assessments. This means that CEM is able to offer a more reliable, more streamlined and integrated suite of assessments from primary through to post-16.

The assessments are:

- Linked to new GCSEs
- More reliable
- More secure
- Continuing to offer year on year comparisons

All CEM assessments have been developed in line with robust research and have been designed specifically to inform teaching and improve academic outcomes for all students.

Download our brochures:

www.cem.org/secondary
www.cem.org/post-16

Read case studies about schools supporting student progress:

www.cem.org/case-studies-testimonials

IMPROVING OUTCOMES

for every child

Research published in April this year by Durham University and the University of Nottingham shows that children with mild attention problems at the age of five could be around three months behind than their peers academically by the time they reach the end of primary school.

Lead author, Dr Christine Merrell, Director of Research at the Centre for Evaluation and Monitoring (CEM), Durham University, said "Children who have been diagnosed with ADHD will already receive extra support in schools. However, children with milder attention problems are not always identified but are nevertheless at risk of falling behind their peers."

Mild inattention can go unnoticed

As mild attention problems can go unnoticed, it is crucial for teachers and parents to work together to identify and help children affected by such problems and to manage their learning in class. The Durham researchers have produced guidance for schools on teaching and classroom management strategies which have been shown to help children with attention problems, as well as all children in class.

We know from our previous research that certain strategies, which are often already used by teachers generally in the classroom, can be effective. These include presenting tasks in bite-size chunks, providing visual prompts through wall charts or posters, and letting children work in pairs. When using these techniques, the key to their success with this group of children is using them in a consistent and systematic way, and understanding why they are helpful.

The study, one of the largest to date in this area, analysed the attainment and behaviour of 46,369 children from 1,812 primary schools in England. It also looked at the impact of hyperactivity and impulsivity – two of the other symptoms of ADHD – on children's academic results. Hyperactivity in children did not negatively or positively influence attainment but impulsivity showed as having a small positive impact on academic progress.

Significant improvements in outcomes are possible

Significantly, this research demonstrates that the understanding of inattentive, hyperactive and impulsive behaviour is still developing. It also underlined what teachers have been telling Local Authorities and the Government for some time; that significant improvements in outcomes are possible, with a modest improvement in resources, and that this should start with improved guidance and sharing of best practice.

The study forms part of a larger body of international research, conducted by CEM and the School of Education at Durham University, which is looking at the effectiveness of the early years of education, primarily pre-school and the first year of formal schooling, with the aim of improving education practice based on clear and objective evidence.

The research team is continuing to track this cohort of children and will analyse their academic attainment in their GCSEs in due course.

- The full research paper, 'A longitudinal study of the association between inattention, hyperactivity and impulsivity and children's academic attainment at age 11', by C. Merrell et al. is published in Learning and Individual Differences, Volume 48 (2016).
- Read Christine Merrell's comment piece in TES Breaking Views: 'It's hard to spot the kids with mild attention problems – but teachers must identify them before they fall behind'
- The research-based guide for teachers on Working with Difficult Children in Primary School is free to download from **www.cem.org/publications**

MEASURING **PERSONAL, SOCIAL AND EMOTIONAL DEVELOPMENT**

In September 2015 CEM launched its **BASE** assessment to help teachers to understand their children's competencies at the start of the reception year.

Alongside the main BASE assessment that looks at children's early literacy, communication, and mathematics abilities there is an online questionnaire asking teachers to rate children's personal, social and emotional development (PSED).

Impact on learning

We know that alongside nascent academic skills, positive outcomes for children depend on their social and emotional development. In order to understand how these skills are progressing and to put any interventions in place, it is useful to try to assess them early in their school life, hence the inclusion of an assessment of PSED in BASE.

The BASE PSED assessment uses a five-point Likert scale based on teacher observations of PSED areas as outlined by the EYFS framework:

- Self-confidence
- Self-awareness
- Managing feelings and behaviour
- Making relationships

Subjective judgements

When reviewing the results of the teacher-completed PSED questionnaire we found a number of interesting quirks. Statistical analysis of the questionnaire responses reveals that, on average, some groups were marked more harshly or more leniently in some areas than others:

- Given their overall score, we found that girls were, on average, marked more harshly on their classroom behaviour than boys. Girls, on average, score more highly overall on their PSED at school entry than boys, however it seems their behaviour is being rated more severely by teachers, leading us to question whether teacher expectations of girls' behaviour is higher than that of boys.
- Children for whom English was an additional language (EAL) were rated more leniently than for those for whom English was their first language for their ability to speak with adults and the ability to describe themselves in positive terms. Perhaps teachers are making allowances for their emerging English-speaking skills?
- The EAL group was also rated more harshly on their ability to adapt to changes in routine and their ability to tolerate delays – does this mean teachers were not taking into account their relative lack of ability to express themselves or to understand the guidance from teachers?

We also identified some issues relating to a halo effect, where subjects are assessed based on general merit, rather than the particular capabilities being asked about. We found that on average there was a higher correlation between different aspects of children's PSED than would be expected. This led us to interpret that teachers were rating more generically rather than against specific traits or questions.

The responses given are based on teachers' observations of their children at the start of the reception year, so they are unlikely to have had the luxury of much time to get to know them well, and we know that teachers get to know their children really well through time spent together in the classroom. However these leniency, severity and halo effects have also been noted consistently in studies of observational assessments.*

Making the most progress

Our 'only-human' subjectivity means that we all make biased judgements and we make allowances for particular individuals or groups, and this can lead us to assess inconsistently. It is often something we are not even aware we are doing.

This is not to say that there is no place for observational assessments, we just need to be aware of their potential shortcomings. These effects in observational assessments can be particularly marked when the child being assessed is not yet well known to the teacher, such as at the start of a school year.

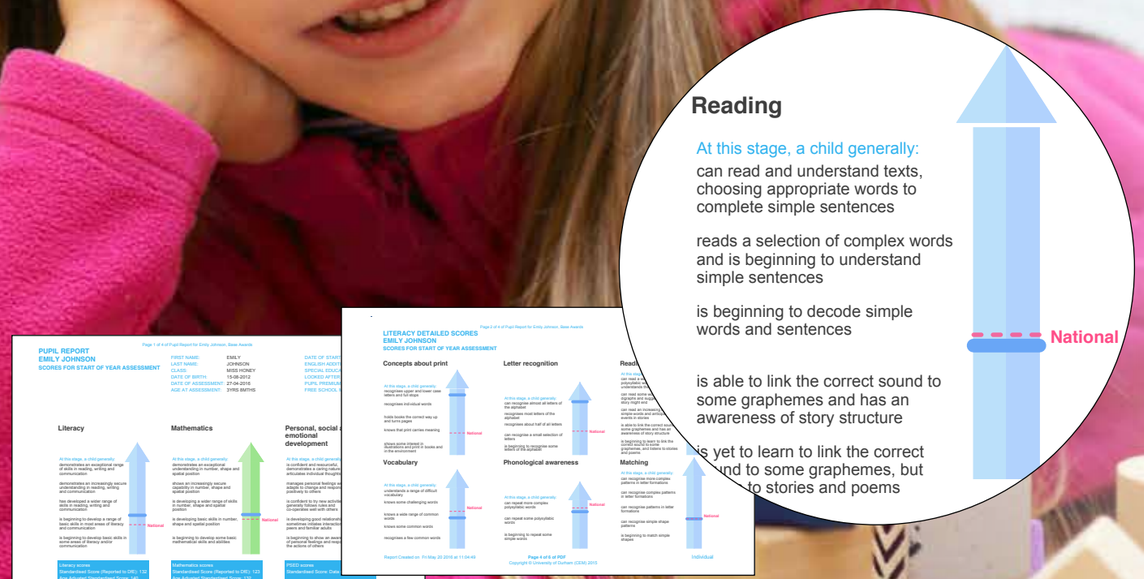
As children make the most progress in learning in their first year of school, skilled and careful triangulation of information from a whole range of sources will provide the best platform for success in the classroom. Therefore, research suggests that children benefit most from teachers evaluating objective assessment with additional data from a range of other sources, such as teacher observation, information about home-background, previous educational experience and attitudes to school and learning.

** Myford, C.M., & Wolfe, E.W. (2003). Detecting and measuring rater effects using many-facet Rasch measurement: part I. Journal of Applied Measurement, 4 (4), 386-422.*

CASE STUDY BASE

EMILY – AGED 4 YEARS & 4 MONTHS

Emily started reception in September and in addition to her teachers carrying out observation-based assessment she was assessed using BASE to get an objective view of her developing ability in literacy and mathematics. She will be assessed again at the end of the reception year to measure how much progress she has made.



Reception is the crucial year in which pupils make their most rapid progress. Emily is an energetic and motivated pupil. Her teacher reports that she is 'very curious' and 'asks a lot of questions', she has a 'good memory for details' and, at times, has somewhat 'fleeting' attention.

Literacy and mathematics scores

Emily's scores in the BASE assessment were 113 in literacy and 114 in mathematics. This means Emily's scores fall in the uppermost region of the range (between 85 and 115) in which most children's scores fall.

Emily's scores show that she has an understanding of the basic skills in most areas of literacy and mathematics and is developing a wider range of skills in both of these areas. The reports show that her performance at this point is above the national average compared to children of the same age.

Given Emily's above-average overall literacy and mathematics scores, it might be assumed that there should be no major concerns associated with her learning. However, a more detailed analysis of her scores in the individual areas of learning offers an additional and incisive layer of information which can help teachers develop a thorough and comprehensive picture of some of Emily's strengths and learning needs.

Literacy – a detailed analysis

Longitudinal studies have monitored children from an early age to investigate the importance and impact of the knowledge and skills acquired during the reception year on later attainment.

Consequently, researchers at Durham University have developed the BASE literacy assessment to include six key areas of cognitive development. To ensure Emily's teachers can plan for her individual needs, it is important to look beyond the overall literacy scores and they should investigate what Emily knows and can do in each strand of literacy development.

In fact, the BASE assessment reveals that, at this stage, Emily can generally recognise simple patterns as well as recognising upper and lower case letters and full stops. She can generally repeat more complex polysyllabic words and she knows a wide range of common words. Emily is able to recognise almost all letters of the alphabet and she can read an increasing number of simple words.

However, the results of Emily's assessments indicate that she would benefit from focussed home and teacher support in developing a range of more challenging vocabulary and repeating polysyllabic sounds through activities such as 'word of the day', reading together and playing with rhyming words. *

Mathematics – a detailed analysis

Research evidence reveals that the process of children learning the language of mathematics, the representation and manipulation of quantities, and the development of spatial awareness does not happen in isolation to other aspects of children's development. It uses processes that play a major role in other aspects of cognitive development.

At this stage, Emily is generally able to estimate how many objects there are and check by counting them. She can generally recognise numbers up to 20 and is able to use the language of 'most' and 'fewest' to compare groups of objects. Emily can also mentally add and subtract 2 single-digit numbers.

In contrast to her literacy scores, Emily's mathematics scores are far more consistent across the range. In each area she is generally performing above the national average and shows no obvious signs of requiring support.

BASE has been developed from over 30 years' experience of baseline assessments. It is based on the most robust evidence-based research and uses a variety of approaches to provide reliable and valid information about each child, with an emphasis on collecting high quality data to inform learning and to provide a robust baseline from which progress can be measured.

We all know that there are many important aspects of children's development. Whilst BASE enables teachers to explore some of these, we recommend that it is used as one element within a comprehensive assessment approach that combines ongoing formative assessment, teacher assessment and, when appropriate, detailed diagnostic assessments. Implemented together, these form a powerful profile of each child's development and progress in their first year of school.

**BASE 'Next Steps Guidance' available*

5 things you need to know about reception baseline assessment:

1. The DfE remains committed to the use of assessment in reception.
2. Schools are encouraged to use a reception baseline assessment.
3. The government will continue to fund the assessment for 2016/17.
4. The DfE will not use the outcomes from the assessments for accountability.
5. The use of a baseline assessment in September 2016 will not be mandatory.

DATES FOR YOUR DIARY

EVENTS

CONFERENCES

EXHIBITIONS

Discover how CEM can help you improve standards at your school. Learn how to get the most from CEM systems and learn from colleagues. Come and meet us at an exhibition or conference. If you are in the UK, you are welcome to come and visit CEM at Durham University.

For a full list visit www.cem.org/events

JUN 2016

23rd - 24th Wellington College
Festival of Education

30th Leeds
CAPITA Secondary Performance Assessment

JUL 2016

4th Durham
Durham Assessment and Learning Conference

6th Leeds
CAPITA Primary Curriculum Conference

SEP 2016

10th London
ResearchEd National Conference

14th - 16th Jakarta
Global Education Supplies and Solutions (GESS) Indonesia

19th - 20th London
Association of School and College Leaders (ASCL), Getting to grips with accountability Measures

21st - 22nd Glasgow
Scottish Learning Festival

29th London
CAPITA Primary Curriculum Exhibition and Conference

OCT 2016

3rd - 6th Stratford
HMC Annual Conference

6th - 8th Barcelona
IBO Africa, Europe, Middle East Regional Conference

13th Newcastle
Schools North East Annual Summit