



Llywodraeth Cymru
Welsh Government

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The Welsh Government response to the report of the Mathematics task and finish group



Digital ISBN 978-1-4734-5393-7
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WG27386

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Preface

When I launched the Mathematics Task and Finish Group at the secondary mathematics for life conference on 28 January, I was able to do so against a backcloth of continued improvement in the subject. Since then, we have seen even further progress. Last summer's results showed 64.4% of our young people achieving A*-C in mathematics, 2.7 percentage points higher than 2014 and, again, the highest on record. We also saw 31.6% of those pupils eligible for free meals achieve 5 A*-C at GCSE, including English or Welsh first language and mathematics. This is 3.9 percentage points higher than in 2014. Clearly the hard work of young people, teachers, and the policies and support we have put in place are having an impact. We are seeing that momentum around improvement; Wales' education system is on the move.

While such improvements are always welcome, there is more to be done. That is why I charged the Mathematics Task and Finish Group to review existing support and consider what more we can do system-wide to improve the teaching and learning of mathematics, including on the supply and quality of teachers of mathematics. The resulting report provides 14 recommendations to Government, and mathematics stakeholders more widely. I accept, or accept in principle, all 14 recommendations.

The Group's recommendations can be considered through two key themes: developing effective practice through an improved support infrastructure; and enhancing the flow of quality teachers of mathematics into the profession.

The report challenges all schools to engage in debate around existing mathematics practice, to draw on the Group's findings on what effective mathematics pedagogy looks like, and to develop improvements in the classroom. Our secondary conference for Heads of Mathematics earlier this year started a process of debate around effective practice. And I know that Consortia have been working closely with schools to develop and disseminate understanding of what works and why.

To build on this, and to maintain momentum, I am announcing £140,000 of funding to Consortia to deliver a national programme of professional development at events on primary mathematics pedagogy over the coming months. Consortia will shortly be in touch with their primary schools regarding dates and local arrangements.

There is real potential for a national Centre of Excellence in mathematics to add value to the mathematics support infrastructure. Such a centre would act as a repository of knowledge around mathematics pedagogy, informing classroom practice, while working with practitioners and Consortia to test new approaches and coordinate professional development.

School to school working and peer support are essential elements of our education system as we move forward. The recommendation on the development of hub schools in mathematics closely aligns with that approach. There is also alignment between this and the work of Pioneer schools. It is essential from the outset that we have clarity of roles and purpose for schools and those involved in the wider support infrastructure. I propose, therefore, that the mathematics hub school approach be brought into the work of New Deal Pioneer schools, and for those Curriculum Pioneers which will work on the Mathematics and Numeracy Area of Learning and Experience.

With regard to improving the quality and quantity of teachers of mathematics in Wales, I am pleased to report we are already taking action. In taking forward Professor Furlong's report *Teaching Tomorrow's Teachers* we are evaluating the effectiveness of current teacher training recruitment incentives. We have commissioned a Task and Finish Group to produce revised ITET accreditation criteria, which will also look at how we can strengthen literacy and numeracy requirements for new entrants to the profession. As part of the wider ITET reforms we are also considering the options available to us to introduce alternative routes into mathematics teaching for suitably qualified individuals including reviewing employment-based teacher training routes.

Taking forward a specific recommendation from the Group, we will commission work to capture information on currently available mathematics professional learning opportunities. We will also do this for science and ICT/computing. I expect the results of that to be made available to teachers in the spring, and for mathematics stakeholders to draw on that information to inform forward planning.

I should like to thank the Task and Finish Group's Chair, Michael Griffiths OBE, alongside all the Group members from primary and secondary school leaders, Consortia, ITET providers and Estyn. I would also like to thank all those who provided evidence or information to the Group in support of their considerations and development of these recommendations.



Huw Lewis AM
Minister for Education and Skills

December 2015

Recommendations and Welsh Government responses

Recommendation 1: In collaboration with Consortia, local authorities, school leaders and governors evaluate current practice at school and consortium level as to what excellent mathematics teaching and learning looks like.

Welsh Government response:

We accept this recommendation, recognising the value of increased debate within and across schools around mathematics pedagogy. The national secondary mathematics conference on 28 January facilitated the sharing of effective practices and ideas on innovative teaching, and work is already underway with Consortia and schools to gain a better understanding of what effective practice looks like. School leaders and Governors, Consortia and local authorities are invited to respond to the report (and Chapter 5 in particular) to engage in a process of benchmarking where schools are against the key areas of learning environment, planning, teaching and assessment as set out in the report. The Welsh Government will support this process further through funding Consortia to deliver a national programme of training and development through events for primary mathematics in local areas across Wales in the coming months.

Recommendation 2: Should consider researching and developing common resources for the primary sector to support teachers in the development of pupils' conceptual understanding and procedural fluency.

Welsh Government response:

We accept this recommendation. The report usefully highlights the issues that are specific to primary or secondary settings; and the importance of having a suite of teaching resources that provide a more standardised base of support for primary teachers and learners is noted. As the recommendation suggests, the development of common primary resources would necessarily follow research into what is already available and applicable. We envisage this would be taken forward through Consortia school to school working, linked to the proposed National Centre of Excellence, as the work of Pioneer schools on the New Deal and the new Area of Learning and Experience for Mathematics and Numeracy develops.

Recommendation 3: Considers establishing a National Centre of Excellence for Mathematics that would be responsible for identifying and promoting excellent mathematics pedagogy, for developing resources, for coordinating professional training and for undertaking best practice, evidence-based research into mathematics and mathematics teaching.

Welsh Government response:

We accept this recommendation in principle. As the report acknowledges, similar approaches to supporting mathematics teaching and learning can be seen working effectively in other countries. This approach could readily be applied in Wales, to support schools and teachers in the teaching and learning of mathematics and beyond the process of curriculum and assessment reform. The recommendation is accepted in principle to allow for further work on the scope and format of such a Centre to be undertaken over the coming months, and to better inform the decisions of the next Government on funding support.

Recommendation 4: Considers establishing school based mathematics hubs across all education settings, which would work collaboratively and in partnership with the Centre of Excellence for Mathematics in considering needs and identifying priorities, developing and delivering courses and resources and in undertaking research.

Welsh Government response:

We accept this recommendation. There is a real opportunity now to bring together the work on mathematics support for schools already being funded by this Government via Consortia; the work of Pioneer schools; and the recommendations of this Task and Finish Group. Evolving the mathematics support infrastructure in tandem with the process of curriculum reform provides a unique opportunity for alignment of work streams and the development of more targeted support. We will work with Consortia and mathematics stakeholders to develop an approach to establish these hubs through the Pioneer schools network.

Recommendation 5: In collaboration with the proposed Centre of Excellence for Mathematics, establishes an accredited national programme of leadership training for curriculum leaders of mathematics.

Welsh Government response:

We accept this recommendation in principle. Following development of a national Centre of Excellence for mathematics in Wales, we envisage it would be well placed to drive forward work on such an accredited national training programme, working in conjunction with the regional Consortia, New Deal Pioneer schools, the Education Workforce Council and other mathematics stakeholders. This is accepted in principle as the forward funding implications are a matter for the next Government.

Recommendation 6: In collaboration with the proposed Centre of Excellence for Mathematics, establishes a recognised national programme of training for all teachers and support staff of mathematics in Wales. As a first step, the Welsh Government should map existing mathematics professional development opportunities available to teachers in Wales, and make that information readily available electronically.

Welsh Government response:

We accept this recommendation in principle. As with the recommendation on a mathematics leadership programme, this teacher development support could be taken forward by the Centre of Excellence working in conjunction with the regional Consortia, New Deal Pioneer schools, the Education Workforce Council and other mathematics stakeholders. Consideration will be given to separate training routes for teachers in primary and secondary settings. Again, this is accepted in principle as the funding implications will be a matter for the next Government.

In the interim, we agree that existing mathematics professional development opportunities should be mapped and we are commissioning that work to begin immediately. That information will be made available to the teaching workforce, and mathematics stakeholders, in the spring.

Recommendation 7: Reviews the arrangements for financial incentives for mathematics graduates to train in Wales in the light of the disparity with other providers in the UK.

Welsh Government response:

We accept this recommendation. Our response to *Teaching Tomorrow's Teachers*, Professor John Furlong's report, outlined plans to undertake an evaluation of the effectiveness of the current teacher training incentives.

Recommendation 8: Explores recognised professional training routes to facilitate the recruitment of suitably qualified applicants into the teaching profession. This could include part time Initial Teacher Education Training (ITET) provision or Subject Knowledge Enhancement programmes to support suitable applicants in meeting entry requirements to secondary mathematics training programmes.

Welsh Government response:

We accept this recommendation. Through Welsh Government funding, Consortia are already working closely with schools on mathematics teacher recruitment and retention, including knowledge enhancement and conversion

training. This should be built on, drawing on support across the network of mathematics stakeholders and, in due course, linking to the national Centre of Excellence. Going forward, the work of the Centre of Excellence, ITET providers, Pioneer schools and Consortia will be essential in supporting existing teachers around mathematics, and the support necessary to ensure new teachers of mathematics are embraced.

Recommendation 9: Considers an accredited mathematics teaching programme that would allow existing qualified teachers to specialise in mathematics.

Welsh Government response:

We accept this recommendation. The issue of accredited conversion training should be taken forward in conjunction with Recommendations 6 and 8.

Recommendation 10: Ensures that common requirements for mathematics and numeracy initial teacher training are incorporated into the accreditation process for all ITET providers in Wales.

Welsh Government response:

We accept this recommendation. In taking forward the recommendations in Teaching Tomorrow's Teachers we have commissioned an ITET accreditation task and finish group to produce revised accreditation criteria that all providers will need to meet in order to deliver future ITET courses. This work includes consideration of student entry requirements, and how the existing requirements for entrants to have appropriate levels of personal functional literacy and numeracy skills can be strengthened.

Recommendation 11: Undertakes a review of the length and balance of teacher training programmes in order to facilitate consistent training in numeracy and mathematics, and to support the development of specialist primary mathematics teachers.

Welsh Government response:

We accept this recommendation. Following the publication of Teaching Tomorrow's Teachers, and as part of our plan to reform ITET, we will be looking closely at the length and content of future ITET course programmes, including plans to develop a 4 year undergraduate primary course, to ensure subject knowledge applicable to primary teaching supports our literacy and numeracy aims is adequately covered. This recommendation will be taken forward in conjunction with work underway to address Recommendation 10.

Recommendation 12: Considers an expansion to the current number of places offered by Teach First Cymru for mathematics graduates, and considers extending the Teach First initiative to the primary sector for mathematics graduates, subject to a successful evaluation of the current pilot.

Welsh Government response:

We accept this recommendation in principle. However, as the report recognises, the future of the Teach First pilot in Wales is dependant on the outcome of independent evaluations on the impact of the programme on learner outcomes in Wales. The outcome of the evaluations, along with other evidence available, including the retention of Teach First teachers, will inform future decisions on whether the programme in Wales should be extended beyond the current contract period. More generally, the point about ensuring a flow of suitably qualified mathematicians into the teaching profession is clear and remains one of our key recruitment objectives.

Recommendation 13: Considers extending the number of funded Graduate Training Programme (GTP) training programme places for mathematics in order to attract more mathematics graduates, subject to meeting the appropriate quality assurance processes.

Welsh Government response:

We accept this recommendation in principle. The current Graduate Teacher Programme is targeted to support and encourage recruitment in our key priority subjects, including mathematics. Subject to the availability of funding we will look closely at increasing the number of places available via this route to meet specific local demand for mathematics teachers from schools including those able to teach the subject through the medium of Welsh. Decisions on future funding are rightly a matter for the next Government.

Recommendation 14: Monitors the numbers for both post 16 and graduate level mathematics study in Wales in order to inform future recruitment and training needs.

Welsh Government response:

We accept this recommendation. Data will be made available to mathematics stakeholders to review and inform future support provision.