Professional Learning Journeys

Executive summary

The report has been written to assist head teachers, principals and other school and college leaders who have a duty of care for the professional wellbeing of their mathematics staff and will be of interest to all those involved in or who have an influence on the subject specific professional development of those teaching mathematics.

The report presents evidence to support professional learning journeys which will develop, retain and sustain teachers of mathematics.

In presenting this summary of the Professional Learning Journeys (developing, retaining and sustaining teachers of mathematics) report, we have chosen to highlight the key questions and themes of the initiatives that have contributed to the findings. We urge you to explore the full findings on the National Centre for Excellence in the Teaching of Mathematics (NCETM) portal. www.ncetm.org.uk/resources/32909

Aims

- To explore the professional development opportunities which should be available to mathematics teachers in the first few years of their careers that will enable schools and colleges to retain teachers.

- To investigate the role of stakeholders such as Local Authorities, Initial Teacher Education/Higher Education ITE/HE establishments, subject associations, CPD providers, schools/colleges, mentors and mathematics teachers themselves in providing, supporting, publicising and ensuring take up of such opportunities.

- To suggest ways in which those concerned might work together to ensure that each mathematics teacher travels a coherent, supportive and inspiring professional learning journey.

Background

The brief of the NCETM is to provide coordination and leadership on all aspects of professional development for teachers of mathematics.

During 2010-2011, members of the NCETM team and associates have been consulting and working with those in mathematics education to investigate how the provision of a rich professional learning journey can enhance the quality of teaching and learning in mathematics. This work is in line with The Importance of Teaching, The Schools White Paper (2010) where there is a strong emphasis on the need to improve the teaching of mathematics and the requirement for teachers to receive on-going professional development. "No education system can be better than the quality of its teachers." (p.2)
This report investigates the factors that contribute to coherent, supportive and inspiring professional learning journeys for teachers of mathematics.

The NCETM collected evidence of learning journeys experienced by mathematics teachers and educators at six consultation events held across the country. Delegates considered research evidence on effective continuing professional development (CPD) journeys, and on teacher retention. Expressions of interest from attendees and others led to the establishment of NCETM-funded CPD projects. These have explored some of the ideas considered and provide evidence for the elements of an effective professional learning journey during the first five years of a mathematics teacher’s career and beyond.

**Supporting research**

The need for continuing professional development for teachers of mathematics is underpinned by both national and European research. The OfSTED report (2006) provides a national perspective on the outcomes of effective CPD.

‘CPD was found to be most efficient in schools where the senior managers fully understood the connections between each link in the chain. They recognised the potential for CPD for raising standards and therefore gave it a central role in planning for improvement. The teachers and support staff in these schools enjoyed high-quality CPD, which had been well chosen from a wide range of possible activities to meet their school’s and their own needs. Schools which had designed their CPD effectively and integrated it with their improvement plan found that teaching and learning improved and that standards rose.’ (p. 5)

The European perspective on professional development is recorded in the OECD document Creating Effective Teaching and Learning Environments (2009). It emphasises that in-service professional development is essential to maintain both a high standard of teaching and high-quality teachers.

‘No matter how good pre-service training for teachers is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers. Education systems therefore seek to provide teachers with opportunities for in-service professional development in order to maintain a high standard of teaching and to retain a high-quality teacher workforce.’ (p49)

This report set out to specifically to investigate the aims above, in line with this research evidence which highlights the need for effective continuing professional development (OECD, 2009) together with the evidence from Ofsted report (2006) which indicates that effective teacher CPD improves learning in the classroom and raises standards. The evidence is already available and this research did not intend to report on the impact of the effects of a coherent, supportive and inspiring learning journey on learners in the classroom

**Findings - Effective CPD**

A number of common factors emerged from the analysis of the evidence from the projects, research and consultation events. These build a picture of what might contribute to effective CPD for teachers of mathematics in their first five years of teaching and beyond.

**Ongoing support for learning journeys**

It was widely viewed by the projects involving newly qualified teachers (NQTs) that initial teacher education (ITE) was merely the starting block for professional development and that if
teachers had the opportunity to continue to engage with their original ITE institution there was potential for a seamless journey from student teacher to established qualified teacher.

The value of networks

In many of the projects there were opportunities for teachers to meet colleagues outside their own institution. Most teachers who participated in the projects commented on the value they placed in having the opportunity to network with other teachers, to share ideas, seek support and to learn that the early and on-going teaching experiences were shared and understood by others.

Changing needs of teachers during the learning journey

Teachers will have their own views about areas for improvement for their own personal and professional development as well as those needs identified by their institution. These will differ for any two teachers, as will their place in a career or learning journey. Teachers need to be engaged in a dialogue with significant people who can facilitate opportunities to enable needs to be discussed, prioritised and supported.

The benefits of involving teachers in planning CPD

Teachers have a part to play in planning their own learning journey. Getting the balance right is imperative. It is important that teachers have the support from a more knowledgeable mentor who can contribute to identifying the professional development needs of the teacher to ensure that the most supportive and effective CPD priorities are set.

Resources supporting learning journeys

It is important to extract from any CPD activity surrounding the use of a teaching resource the recognition of the change in pedagogy or subject knowledge of the teacher as a result of exploring, using and evaluating the resource.

Reflection and research

Teachers’ comments often referred to the fact that a CPD activity had been successful because it allowed them time to research and reflect and thus implying that this was not usual in their ‘normal’ day. For others, the opportunity to read and engage in research led to even more meaningful changes in practice. Teachers also need to learn how to use that time and space to reflect effectively. It is not a ‘given’ that teachers automatically know how to do this.

Entitlement to professional development

An entitlement to CPD can help to ensure that CPD is valued and recognised as an essential part of professionalism, but how this can be expressed or prescribed is more troublesome. The evidence provided by the report on the work of the Institute for Learning (IfL) www.ncetm.org.uk/resources/32895 supports the notion of entitlement and offers a model from the Learning and Skills sector on which schools might build.

Challenges to achieving an effective learning journey

Many of the CPD models developed have the potential to support teachers through their first five years of mathematics teaching and beyond, but without the guaranteed commitment of
funding, some of these projects are less viable as sustainable models. Anecdotal evidence from teachers suggests that ‘rarely cover’ is having a negative effect on take up and release for CPD, although where CPD is supported by the Senior Leadership Team (SLT) access in teaching time is not an issue. Local authorities (LAs) are now having to re-organise staffing, reducing the number of subject specific advisors and consequently the availability of LA CPD providers to schools.

**Conclusions**

Schools and colleges need to ensure that the senior leadership teams hold subject specific CPD in high regard which is then reflected in such a way that Department Heads and Subject Leaders can support their staff to develop.

School and college senior leaders need to be informed and advised, so that they clearly understand the significance of subject specific professional development in mathematics, both at an internal departmental level and in external networking experiences, that foster improvement in teaching and in learning, so that they are empowered to support such development.

Teachers need to be included in the planning of their own professional learning journey but should also be able to draw on the expertise of others to ensure that the journey will be supported, meaningful, sustained and effective.

CPD providers, in particular HEIs and LAs should consider working collaboratively to develop models of support for teachers in their first few years of teaching in order to maintain continuity from ITE to becoming established within the teaching profession.

CPD Providers should utilise the benefits of developing well planned teacher networks that meet regularly. These should include the setting of gap tasks to follow up on in order to help sustain involvement of the teachers.

CPD Providers and teachers should exploit the use of approaches and resources which provide opportunities to develop and improve pedagogy, classroom practice and learner understanding: for example, the approaches exemplified in ‘Improving learning in mathematics’.

As part of their provision, CPD providers need to include opportunities for teachers to reflect deeply and meaningfully on changes in their own and others’ practice or changes in how children learn. The greatest benefits of this are when it forms part of a continuous cycle of reflection.

CPD providers, the NCETM and schools and colleges should work together to ensure that a structured but flexible menu of mathematics subject knowledge and pedagogy development opportunities is made available to all teachers including activities such as lesson study, collaborative working and networks.

The NCETM should explore further if and how best an entitlement for all teachers of mathematics should be framed to ensure that they engage with CPD that is meaningful and worthwhile. As in other professions, teachers need to access and need access to continuing professional development and those with a duty of care for mathematics teachers in schools and colleges need to ensure that provision is both accessed and accessible.

The NCETM should investigate the benefits of recruiting NQTs into M-Level study as a means to providing an incentive to committing to and reward for participating in CPD.
Recommendations

Based on the evidence from research, the consultations and the NCETM funded projects a number of recommendations are made to senior leadership teams of schools and colleges, to providers of CPD and to the NCETM.

CPD providers in the NCETM funded projects included schools, colleges, local authorities, HEIs and ITEs. The Schools White Paper (2010), The Importance of Teaching, introduces the national network of Teaching Schools. These Teaching Schools will be funded to offer professional development to teachers and leaders and so the recommendations are also directed to the new national network of Teaching Schools.

Recommendation 1

Senior leadership teams in schools and colleges should be informed and advised so that they understand the nature and significance of mathematics subject specific professional development to underpin improvement in teaching and learning and so ensure that:

- teachers of mathematics are nurtured and guided to plan and engage in their own sustained and effective professional learning journey
- mathematics subject leads are well supported to play a key role in leading regular, on-going, planned discussion on mathematics specific pedagogy with their departments (not just generic CPD)
- a formalised observation cycle is facilitated that promotes formative feedback and provides opportunities for reflection
- access to a range of mathematics subject specific CPD opportunities both within and outside the school or college is supported

Recommendation 2

Providers of mathematics CPD should work collaboratively to provide a range of opportunities within the teaching establishment and/or externally which:

- ensures supported continuity from ITE into the teaching profession
- provides well planned networks that meet regularly and require a gap task to be completed
- offers a flexible menu of mathematics subject knowledge and pedagogy exploiting resources that underpin classroom practice and learner understanding
- focuses on teacher collaboration and reflection

Recommendation 3
The NCETM should

- promote, support and quality assure, through the NCETM CPD standard, a range of mathematics subject specific CPD
- explore further the notion of entitlement to professional development for all teachers of mathematics

investigate the efficacy of M-level study as a vehicle for continuing professional development for teachers of mathematics