

REPORT ON TDA'S PILOT MULTIPLE-PLACEMENT IN MATHEMATICS AND SCIENCE 2007

HEADLINES

The evaluation of the project indicates that multiple placements for mathematics and science can:

- begin to address lack of placements, which restrict recruitment
- improve the quality of placement and training for trainees
- impact positively on pupils' learning and teacher-mentors' professional development

BACKGROUND

In spring 2007 the TDA launched this pilot project which targeted the sufficiency and quality of placements in providers where this was potentially a limiting factor on recruitment. Its key purposes were to:

- assist in reducing barriers to increased recruitment
- increase the sufficiency and quality of mathematics and science placements by developing multiple placements
- gather evidence from stakeholders of the ways in which pair and multiple placements enhance training

All providers where a lack of school placements was believed to restrict recruitment in mathematics or science were invited to take part, including all those identified by the TDA as having significant shortfalls in recruitment to these subjects. A number of those providers invited, whilst interested in participating in the future, were unable to do so this year because of the lack of lead in time in relation to their final assessed placement. In total 20 providers agreed to participate with eight of these providers being in the significant shortfall category. Nineteen providers completed the project with six being involved in both mathematics and science, eight in science only and a further five in mathematics only. One provider was unable to complete the pilot due to student drop out early in the placement.

The project invited providers to place trainees in multiple placements (at least pairs) during the final assessed practice. At the start of the project, providers' expertise in managing multiple-placements was divided equally between providers who had no or very little practical experience of multiple-placements and those who were actively using 'pairs' but not necessarily in the final placement or as an established feature of mathematics and science. The project involved providers developing 'new' working methods with over 80 schools, their mathematics and science department staff, and almost 200 trainees. Pilot providers indicated their main aim was to increase the number of schools offering multiple-placements whilst maintaining or developing further quality. Underpinning the quality aspect of placements was a drive to enhance the learning trainees achieved whilst on their final placement: particularly exploiting the opportunities for collaborative professional learning. An unforeseen benefit of the project was the opportunities offered by multiple placements for trainees and mentors to develop their coaching and mentoring skills. Pilot providers clearly used the project as a means of developing partnership expertise with multiple-placements and actively disseminated this evidence to support their advocacy for multiple-placements to partnership schools who were not involved in multiple-placements.

Table 1: Providers participating in the TDA's mathematics and science multiple-placement pilot project (2007) by priority subject involvement

	Priority subjects		
	Mathematics and science	Only mathematics	Only science
Providers participating in the Pilot	<i>Bradford College, NewmanCollege, Nottingham Trent University, University of East London, University of Southampton, University of Sussex.</i>	<i>Liverpool Hope University, Oxford Brookes University, St. Mark and St. John, St. Mary's University College, University of the West England, University of York.</i>	<i>Keele University, Manchester Metropolitan University, University of Bristol, University of Leeds, University of Leicester, University of Durham, University of Sunderland, University of Warwick.</i>
Total	6	6	8

KEY FINDINGS

All providers who participated in the pilot found that it provided good opportunities to explore ways of using multiple-placements with schools to increase the number of placements and their quality, in order to support full recruitment to mathematics and science. By the end of the project, the overwhelming majority of participating providers reported that they had made progress with devising successful ways of placing trainees in multiples and had gathered evidence to support developments with further partnership schools. Amongst these providers there was greater confidence that using multiple-placements would support full recruitment through removing or at least reducing the barrier of a lack of suitable school places. A further quarter awaited final responses from schools regarding offers of multiple-placements for the forthcoming year before being able to make this conclusion. Three-quarters of participating providers reported improvements to the quality of the placement for trainees, providers, mentors and pupils. The positive outcomes reported by providers in terms of increased placements and quality led the overwhelming majority of pilot providers to express a strong commitment to continue with the multiple-placement approach through Phase Two, and other related work with their partnership schools.

BENEFITS

Providers participating in the multiple-placement pilot identified a range of benefits that arose from using multiple-placements. Multiple-placements provided a vehicle to re-engage with partners and re-examine practice in the light of changing demands in school and ITT. The benefits of multiple-placements are summarised for convenience under the following headings: trainees, pupils, schools, teacher-mentors, and HEI tutors, although it is the interactions between these that is most significant.

Trainees

Significant benefits for trainees working in multiple-placements were reported by providers. Multiple-placements, with their emphasis on collaboration in training, underpinned trainees making greater progress towards QTS through deepening their learning. Deeper learning opportunities were created by collaborating trainees:

- taking on bigger challenges, for example, more demanding practicals (in science), challenging classes (including some in Schools Facing Challenging Circumstances), groups where higher order subject knowledge was required ('A' level drop in class), and supporting innovative curriculum implementation (use of technology)
- providing higher quality teaching through mutual support with lesson preparation and planning, evaluation and the required underpinning subject knowledge
- gaining deeper insights into learning (self and pupil) and professional development (standards)
- increasing their understanding of the roles of colleagues within the wider school workforce [for example, through taking on the role of teaching assistant (TA) or planning a TA's work within a lesson they were leading]
- appreciating the role that personal and emotional support plays in professional development particularly whilst settling into a placement and generally through increased access to peers during the placement
- Adopting and developing skills in peer mentoring through providing increased structured lesson observation and focused feedback: which increased their working understanding of the QTS standards

Pupils

A key pilot finding was the direct benefits to pupils' learning gained through being taught by several trainees working collaboratively. Multiple-placements created improved learning opportunities for pupils through:

- trainees planning and delivering higher quality lessons
- providing better targeted support to pupils in lessons and group work (including special arrangements made possible through additional resource created by multiple-placements)
- improving the match between pupils' personal needs and the range of teaching/learning experiences available
- demonstrating improved behaviour management with 'harder to teach' classes (including some in Schools Facing Challenging Circumstances)

Schools

A significant benefit for schools was that multiple-placements provided them with greater flexibility to respond to pupils' needs (personalization) through maximising timetabling opportunities. Multiple-placements acted to:

- reduce the number of classes that needed to be scheduled compared to two separate placements (i.e. reduced potential disruption through trainees 'sharing' classes and groups)
- enable a wider range of classes to be taught including more challenging and higher achieving groups (which may have previously been deemed too demanding for trainees working on their own)
- support department developments such as 'A' level drop in sessions, 'gifted and talented' or under-achieving pupils' target groups, or cross-curricular innovation
- provide opportunities to deepen partnerships with HEI through joint ITE and CPD developments (including the development of departmental teaching and learning practices)
- increase opportunities for recruitment to the school through more potential NQTS working in schools seeking new staff

Mentors

Mentors were at the heart of multiple-placement developments and there was a strong sense that it provided them with rich opportunities to further develop their effectiveness as mentors.

These potential benefits in mentoring and coaching were linked to the 'New Professionalism' through mentors:

- being professionally challenged, enthused and developed by working with several trainees arranged in multiples
- engaging in developmental activities to explore the new QTS Standards and the ways that these can be developed in multiple placements
- having enhanced opportunities to reflect on their work in teaching teams and the roles of different colleagues within these (e.g. teaching assistant, coach)
- modeling good training practices, for example, by coaching and giving feedback to trainee 'A' whilst trainee 'B' observed and gave feedback to the mentor

HEI Tutors

Multiple-placements brought a range of benefits to HEI tutors and their institutions. These acted to strengthen the working ITE partnership between tutors and schools, and enhance the quality of training it delivered by:

- increasing the time spent by tutors on supporting trainees and working with mentors through reducing tutors' travel time as there was more than one trainee in each school
- providing more opportunities to coach and support mentors (and colleagues) in developing their work with pairs
- increasing the opportunities for wider-based professional collaboration and reflection on the changing role of the tutor through working with trainees and their mentor (for example, joint observations, introducing a curriculum development)
- maximising the effectiveness with which the partnership uses good quality placements offered in priority subjects and how it targets support to develop these
- encourage tutors to develop new ways of supporting mentors and their pairs for example by coaching the mentor rather than the trainee

PERCEIVED ISSUES AND SUCCESSFUL APPROACHES

Perceived issues

Participating providers were asked, before the start of the pilot, for their perceptions of potential barriers and disadvantages to introducing multiple-placements. The main concerns were that:

- any lack of clarity in purposes, roles and practices associated with multiple-placements would impair trainee and pupil progress
- trainees would not have sufficient 'solo' teaching to achieve the QTS standard required
- multiple-placements would heighten any potential conflicts arising from differences between the trainees, such as those arising from pairing a 'strong' with a 'weak' trainee or in their personalities: and these would impair trainee progress
- pupils would be confused by the new multi-placement arrangements and their learning would be impaired
- mentors would anticipate multiple-placements generating a greater proportionate workload, which would overburden hard pressed teachers
- mentors would lack the necessary mentoring and coaching skills required by working with multiple-placements
- timetabling any 'shared' aspects (e.g. shared classes, joint meetings, shared 'non-contact' time) would be problematic if not impossible
- where departments have low staff numbers and/or physical classroom space was limited that multiple-placements could not be accommodated
- schools would be resistant to any changes in ITE practices as these implied additional workload for their teachers or had the potential to destabilize the status quo

In practice many of the potential concerns did not materialise or were overcome through careful preparation and planning. The following quote from a provider captures this general finding: "...our potential fears and concerns did not materialise in any dramatic way". Indeed, many of the providers reported outcomes which were opposite to the envisaged disadvantage whereby the perceived problem became positively advantageous for participants. The benefits (listed above) provide many examples of turning a potential disadvantage on its head. The following extracts from providers' evaluation reports illustrate the debunking of several key concerns:

"The issue of mismatched pairs appears not to be as problematic in reality as schools and trainees feared. The experiences of two trainees, two mentors and one PCT [coordinating mentor] suggest that there is no more work when a trainee is a cause for concern whether they are on a single or paired placement."

"Mentors found paired placement with joint teaching better than two individual trainees – quality of planning and analysis of lessons was improved. Discussions based on lessons where all 3 of them had been present were particularly useful. For us the focus on the joint nature of paired placements encouraged healthy debate and discussion with all concerned."

"Trainees could be given more difficult groups – so could develop their understanding of 'characters'."

"I am pleasantly surprised by the degree of enthusiasm and engagement with which trainees and mentors have embraced the project. From trying to 'sell' them involvement at the outset, I find them fully 'owning' the experience. They are mid-way through their own individually designed programmes and fully able to critically evaluate the work in progress."

"The project has been far more successful than I anticipated, because of the level of enthusiasm which it generated in the trainees and mentors. In all three schools, the trainees were reluctantly brought on board. And in all three cases, they concluded enthusiastically about the benefits of the experience, in spite of also bringing balanced and measured analysis as to the drawbacks. Mentors have also been much more positive than expected. At *one school*, the head of maths and maths mentor were both fantastic in their positive attitude and clarity of vision as to the long term benefits of collaborative training and teaching."

"A benefit to both schools and trainees is the possibility of giving the trainees a challenging class to team teach: trainees appreciate the opportunity to work with a class they might not otherwise have been able to deal with, while it also widens the pool of potential classes for departments to use."

Successful approaches

The following approaches have been distilled from providers' reports and together start to build a framework for successful multiple-placement practice. Projects are more likely to be successful where:

- school departments, interested in taking paired students, are identified as early as possible and are involved in the planning, preparation, implementation and evaluation of paired placements.
- there is clarity regarding the roles and responsibilities of School-Based tutors, trainees and HEI-tutors, on paired placements, and how these might develop during the course of the ITE programme
- the roles and responsibilities of School-Based tutors and HEI-tutors are developed to take account of the new expectations, and these are reflected in teacher-mentor training and guidance for university tutors

- time is allowed in the programme to: (i) prepare trainees and mentors for paired placement, and (ii) implement shared placement arrangements (e.g. joint teaching and mentor sessions)
- a range of 'working' models for pairs that suit subject, student, school and HEI needs and expectations are developed and offered to mentors and trainees.
- the higher level mentoring/coaching skills needed for successful multiple placements are recognised and developed through appropriate support including training
- partnerships recognise that mismatched pairs are inevitable, can be managed successfully, and provide valuable professional experience and learning in managing under-performing colleagues
- pupils understand what is expected of them in each lesson and what roles trainees and mentors are adopting
- time is allowed in university and school for trainees to work together and develop team working skills required by paired placements including peer observation and providing feedback
- a protocol for what to do when a pair, despite remedial action, does not work is agreed and understood
- partnership mentors, HEI-tutors, and trainees (whether they are directly involved at this stage or not) are kept aware of multiple-placement developments and staff are pro-active about disseminating emerging practices especially through participants

The model adopted for managing multiple placements varied across providers and their partners, according to their needs and expertise. A basic working model is summarized in the box below.

A basic model for multiple placements

Two trainees are placed in a subject department with a single mentor. Each trainee has their own timetable, with time for individual feedback. Within their normal allocated contact time the trainees have at least three hours per week of shared responsibility for a class or classes. Time (at least an hour) is allocated each week for the mentor and trainees to meet together to plan for and evaluate shared working. How the shared class time is used will depend on the trainees' individual developmental needs. The model allows for a good deal of flexibility and the planned activities will draw on the expertise of the trainees and that of the mentor. For example, at the start of the placement the mentor may wish to focus on developing the trainees' feedback skills and so trainee A plans and teaches a lesson while trainee B observes and then offers feedback, coached by the mentor; this process being reversed in the next week. Later in the placement the trainees ask for advice about how to make more effective use of teaching assistants (TAs). The mentor asks trainee A to teach a lesson while trainee B acts as TA, with the mentor commenting on the lesson in general and encouraging B to reflect on the role of TA and how effectively trainee A has briefed and used trainee B in the TA role. At the mid-point of the placement it becomes clear that trainee A would like to improve an aspect of their teaching, which trainee B is already adept at (e.g. question and answer or managing group work). Trainee B supports trainee A in planning the lesson and then observes trainee A deliver the lesson and gives feedback to trainee A with the mentor supporting and coaching trainee B in giving the feedback. Finally, at the end of the placement, the mentor and trainees co-plan and co-teach a demanding lesson (e.g. field work or complex role play) this is followed by a three-way evaluation of the lesson.

IMPROVEMENTS FOR PHASE 2 (2007-08)

The pilot was successful in examining how multiple-placements can increase providers' confidence that they can develop the necessary quality placements to meet the increased need that full recruitment to mathematics and science would generate. It has also highlighted several ways in which the TDA could further support providers who are developing multiple-placements, and ways in which providers themselves can become more effective in developing

multiple-placements as part of their partnerships with schools. The following notes list the main improvements arising from the pilot (2007):

TDA

The TDA will:

- maintain the project focus on providers who have the highest shortfalls in mathematics and science recruitment
- ensure that participants understand that the connections between placement sufficiency, recruitment, quality and retention continue to be central to the multiple-placements project
- make an earlier start to Phase 2 to enable participating providers to set-up more final placements effectively and prepare trainees, tutors and mentors appropriately
- make full use of learning from pilot by writing support materials for participating providers
- provide continuing dissemination opportunities through mathematics and science workshops
- become more proactive in supporting schools and colleges disseminate their multiple-placement work, for example, through SSAT and subject associations
- consider wider dissemination of multiple-placement practices to other phases and examine what the project has to offer the TDA's wider work and aims (e.g. Cross-directorate projects)

Providers

Will be encouraged to:

- start preparations for final placement multiple-placement in the preceding summer term
- involve schools, mentors, trainees and tutors as early and fully as possible in the planning, preparation, implementation and evaluation of paired placements possibly through a working group
- ensure partnership schools are aware of progress in developing multiple-placements, seek their support through their offering paired placements, and offer them the necessary enhanced training
- be proactive in networking with other providers involved in developing multiple-placement to maintain momentum
- monitor their decision making about their partnership's development of multiple-placements and how, and if, they decide to move from a project, to a programme to a strategy

PLA

PLAs will:

- support providers to develop a strategic approach to multiple-placements
- support providers' use of premiums and other resources to create viable and worthwhile exploration of multiple-placements
- support on-going dissemination and networking of providers engaged, or wanting to engage, with multiple-placements
- gather and feed outcomes and developments, as appropriate, into the TDA's on-going work